Medical Library

MAY 12 1932

This Issue Exceeds 88,500 Copies

THE JOURNAL

OF THE

American Medical Association

Subscription, $7.00 | PUBLISHED WEEKLY | Single Copies, 25 Cents

VOLUME 98, No. 20 | 535 North Dearborn Street, CHICAGO, ILL. | MAY 14, 1932

CONTENTS AND SUBJECT INDEX

The Great Course of Medical Endeavor: President's Address. E. H. Cary, M.D., Dallas.....1697

Abdominal Pain Due to Hypothyroidism. J. W. Hinton, M.D., New York.....1702

Treatment of Older Diabetic Patients with Cardiovascular Disease. Solomon Strouse, M.D.; Samuel Soskin, M.D.; Louis N. Katz, M.D., and S. H. Rubinfeld, M.D., Chicago.....1703

Ulcerative Colitis Due to Chronic Infection with Flexner-Y Bacillus. Thomas T. Mackie, M.D., New York 1706

Bacilluria Under Ketogenic Treatment. Anson L. Clark, M.D., Rochester, Minn.....1710

Suicide: Some Danger Signals. Ruth E. Fairbank, M.D., Baltimore.1711

Polycythemia Vera. Clair L. Stealy, M.D., San Diego, Calif.....1714

Hemorrhage into Stroma of Ovaries. G. J. Rukstinat, M.D., Chicago.1716

The Ophthalmic Test for Sensitivity to Horse Serum. Louie N. Claiborn, M.D., New Haven, Conn.1718

"Myxedema Heart" Without Evidence of Cardiac Insufficiency. David Ayman, M.D., Boston; Harold Rosenblum, M.D., San Francisco, and Mark Falcon-Lesses, M.D., Boston.....1721

Acute Aplastic Anemia Complicating Arsphenamine Therapy. I. D. Bronfin, M.D., and Isidor Singerman, M.D., Denver.....1725

Renal Carbuncle in Infancy. M. F. Campbell, M.D., New York..1729

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Irradiation of the Parathyroids in Cystic Disease of the Bones. Edwin A. Merritt, M.D., Washington, D. C.....1733

Removal of Vascular Fibroma by Electrocoagulation. A. F. Tyler, M.D., and K. L. McShane, M.D., Omaha 1734

Clubfoot. Frederick C. Kidner, M.D., Detroit.....1736

Fracture of Elbow. J. W. Sever, M.D., Boston, and H. Q. Gallupe, M.D., Waltham, Mass.....1737

The Cervical Pessary—A Menace to Health and Life. Harold O. Jones, M.D., Chicago.....1738

SPECIAL ARTICLE

The Relationship of the Private Medical Practitioner to Preventive Medicine. Sir Arthur Newsholme, M.D., Birmingham, England..1739

COUNCIL ON PHARMACY AND CHEMISTRY 1744

COMMITTEE ON FOODS 1745

EDITORIALS

"Trace" Elements in the Body..1746

Rectal Administration of Sugar.1747

A Comparison of Milk from the Two Breasts 1747

CURRENT COMMENT

Hypervitaminosis D and Arteriosclerosis 1748

(Subject Index on next page)

ASSOCIATION NEWS 1749

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Sec. 1103, Act of Oct. 3, 1917, authorized on June 14, 1918. If undeliverable, forwarding and return postage is guaranteed.

Copyright, 1932 by the American Medical Association.

The *New* Mayo Clinic Volume is Ready

Never during the twenty-two years that this annual volume has come out of the Mayo Clinic has there been one so practical in content, so definitely helpful to both general practitioner and surgeon. Its contributions —and there are 177 of them—have been painstakingly edited in order to bring out the salient practical features of each one, and eliminate all unnecessary words. Notwithstanding this, the volume this year is 100 pages larger than last year's and contains 30 more illustrations.

If you will turn to *page 3* (immediately inside the cover) you will see listed a few of the contributions in this volume which have a specific appeal to the *physician in general practice,* and in another column articles that have a similar appeal to the *surgeon.* These contributions have been listed in order to show the wide range of subjects covered and the constant daily use to which the volume may be put by every member of the profession, whether he be general practitioner, surgeon, or specialist.

See SAUNDERS' ADVERTISEMENT on Pages 3,4,5

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

A. M. A., President Cary's address.....*1697
Pershing Hall Memorial.....1749
Abdomen pain due to hypothyroidism.....*1702
Accidents, railway vs. road.....1754
Amyloid Disease, diagnosis by congo red ab-1774
Anemia, acute aplastic, complicating arsphenamine therapy *1725
pernicious, statistics on permanence of cure 1763
Anesthesia, nitrous oxide-oxygen-ether explosion C-1761
Angina Pectoris, epinephrine test in...ab-1769
possible, following shock.....1762
Aortic Valve, disease.....ab-1773
Arsphenamine therapy, acute aplastic anemia complicating *1725
Arteries, coronary disease ab-1771
Arteriosclerosis and arterial atony.....ab-1774
hypervitaminosis D and.....E-1748
Arthritis, traumatic, periarticular infiltration with procaine hydrochloride.....ab-1776
tuberculous, surgery for ab-1771
Association News **1749**

Bacilluria under ketogenic treatment....*1710
Blackwater Fever ab-1774
Blood pressure, high, dangers.....1762
pressure, high, early sign of pregnancy toxemia ab-1773
sugar, effect of dextrose rectally.....E-1747
transfusion, cross agglutination tests before 1763
Body, "trace" elements in.....E-1746
Bones, cystic disease, irradiate parathyroids in *1733
Book Notices **1765**
Books Received .....**Adv. page 34**
Botulism from ripe olives.....1763
Breast, cancer, protecting women from death from ab-1772

Cancer campaign and Gösta Forssell.....1756
Cardiovascular Disease in older diabetics, treatment *1703
Chicago Medical Society summer clinics...1749
Chickenpox, identity of herpes zoster and.1755
Child Health, conference on, Iowa.....1750
Colitis, ulcerative, due to Flexner-Y bacillus *1706
Committee on Foods **1745**
Copper, "trace" elements in the body..E-1746
Correspondence **1761**
Council on Medical Education.....**1764**
Council on Pharmacy and Chemistry.....**1744**

Deaths **1759**
Debierre, Charles, death.....1756
Dehydromorphine, pharmacology ab-1771
Dextrose by rectum, effect on blood sugar. E-1747
Diabetes, older patients with cardiovascular disease, treatment *1703
Diarrhea in nursling, diet for.....ab-1778
Digitalis, diuretic effect.....ab-1769
Dormitory, American, Mrs. Woolley's gift to 1755
Dunbar, Arthur W., promoted to rear admiral 1753

Elbow, fracture *1737
Embolism, pulmonary, fatal varicose veins injection 1754
Epilepsy in children.....ab-1773
Erythrocytes, elliptic human ab-1769

Fee schedules, lowering, Germany.....1757
Fibroma, massive vascular, removal by electrocoagulation *1734
Fingers, eczematoid eruption 1762
Food poisoning outbreak.....1750
Foot, clubfoot *1736
Foreign Letters **1754**
Forssell, Gösta, and campaign against cancer 1756
Fracture, susceptibility to 1763

Gallbladder disease, diagnosis.....ab-1771
Goiter, Exophthalmic, rapid form.....ab-1776
Government Services **1753**
Gynecology, course in, Wisconsin.....1753

Hair, cutting, effect on growth and quality.1763
Hand, pathology of injury to.....1764
Harvard, courses for graduates.....1751
Harvey Lecture, eighth.....1752
Health ordinances, physicians to recodify, Duluth 1751
Heart, determining direction of electrical axis of electrocardiogram.....ab-1769
disease in children, study, New York....1752
disease, survey of, San Francisco.....1749
insufficiency, regular extrasystolic bigeminal rhythm with.....ab-1776
left-sided displacement ab-1769
Morgagni-Adams-Stokes disease ab-1776
myxedema *1721
transverse diameter ab-1769
Herpes zoster, identity of chickenpox and.1755
Hypothyroidism, abdominal pain due to...*1702

Infants, coconut milk in nutritional disturbances ab-1777
Influenza in Asia Minor 1758
International Congress on Urban Hygiene.1755

Jaundice, identification of Leptospira icterohaemorrhagiae 1758

Kidney, carbuncle in infancy.....*1729
denervation ab-1770
function tests in nephritis.....1761
Kuppenheimer Foundation 1750

Larynx tuberculosis, roentgenogram....ab-1777
Liver diseases, diathermy treatment...ab-1778
disorders, infantilism and hypo-evolutism in ab-1776

Malaria control program of Missouri Pacific 1751
Malpractice: examining physician; employer's liability to employee.....Ml-1768
Marriages **1759**
Medical Endeavor, great course of.....*1697
Medical Practice Act, new, France.....1755
regarding foreign physicians, Turkey..1757
Medicolegal **1767**
Meetings, Coming Meetings.....**1768**
Memory, "coast" 1019; 1764
Mental Hygiene clinics.....1751
Milk from the two breasts compared....E-1747
Minerals, "trace" elements in the body.E-1746
Mitral Valve stenosis, hemorrhage into stroma of both ovaries after.....*1716
Myxedema heart *1721

National Academy of Sciences awards medals 1753
Naval Medical Bulletin 25 years old.....1753
Nephritis, prognosis and treatment in.....1761
New and Nonofficial Remedies.....**1744**
News **1749**
Nitrobenzene, industrial hazard of.....1762

Obstetrics, course in, Wisconsin.....1753
Occupational Therapists, directory of.....1753
Olives, ripe, botulism from.....1763
Ovary, hemorrhage into stroma of.....*1716

Parathyroid insufficiency and infantile tetany ab-1775
irradiation, in cystic disease of bones...*1733
Parathyroid hormone, effect in tuberculous hemoptysis ab-1777
hyperparathyroidism and osseous syndromes ab-1775
hypoparathyroidism and hyperparathyroidism ab-1775
surgical anatomy ab-1775
Pellagra, achlorhydria in ab-1774
Pessary, cervical, menace of.....*1738
Pharmacy, four year courses in, approved..1752
Physicians, practicing, relation to preventive medicine *1739
supply, excess, in France.....1756
Pituitary, hormone of pars intermedia....1757
Placenta praevia, effect of fall in.....1764
Pneumothorax, spontaneous, in healthy..ab-1778
Policard, Albert, to give Harvey Lecture..1752
Polycythemia vera, phenylhydrazine hydrochloride for *1714
Pregnancy, toxemia, hypertension early sign ab-1773
Preventive Medicine and private practitioner *1739
Primrose, sensitivity to, in florists.....1762
Prostatitis, treatment 1764
Pyocolpos, lateral ab-1775

Queries and Minor Notes.....**1761**

Radio Program **1749**
Radiotherapy, malignancies appearing after ab-1776
Rickets, incidence, in infants, Turkey.....1758
Rothrock, John L., honored.....1751

Senses, are there more than five?.....1763
Serum, horse, ophthalmic test for sensitivity to *1718
Sigerist, Henry E., succeeds Dr. Welch...1750
Society Proceedings **1768**
Spleen disorders, infantilism and hypo-evolutism in ab-1776
Stains of blood, semen and urine in criminology ab-1778
State Board Examinations.....**1764**
Sterilization of fabrics in hospitals.....C-1761
Sugar, rectal administration.....E-1747
Suicide; possibilities of prevention.....*1711

Tetany, infantile ab-1775
Thyroiditis, ligneous ab-1777
Tissues, human, spectrographic analyses..E-1746
Tobacco smoking denounced.....1754
Tonics and Sedatives.....**Adv. page 28**
Tonsils, involvement, in tuberculosis...ab-1777
Toxemia, treatment with digitalis.....ab-1771
Tropical amnesia 1764
Tuberculin tests in children vaccinated with BCG 1758
Tuberculosis, decline, in England.....1754
institute, 5-day postgraduate.....1751
pulmonary, hemoptysis in, parathyroid hormone in ab-1777
Tularemia: occurrence in sage hen...ab-1773
Tumors, course on.....1752
Typhoid at college traced to carrier.....1750
vaccine, antibody response to.....ab-1770
vaccine inoculation, antibody response to ab-1770

University of California summer courses..1749
of Cincinnati, new admission rules.....1752
of Missouri, suspend clinical years.....1751
Uterus cervicitis, coagulation of cervical canal for ab-1772

Varicose Veins, deaths from injection treatment 1754
Viosterol and arteriosclerosis E-1748
Vitamin B deficiency, nervous system lesions from ab-1770
hypervitaminosis D and arteriosclerosis.. ..... E-1748

Welch, William H., Dr. Sigerist succeeds..1750
Workmen's Compensation Acts: sarcoma; attributed to trauma Ml-1767

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 98, NO. 20 CHICAGO, ILLINOIS MAY 14, 1932

THE GREAT COURSE OF MEDICAL ENDEAVOR

PRESIDENT'S ADDRESS

E. H. CARY, M.D.

DALLAS, TEXAS

Suppose we stand on the high bridge that crosses the stream of knowledge, to gain a perspective of the entrance of medicine into the affairs of man. Far up the tortuous course we look, and strive to interpret the events which have influenced the flow of the thoughts of man—which have set him free. We see an infinite variety of streams, some sluggish, some strong, all entering the channel, with here and there a beacon light to illumine the way. Men of letters, scientists, artists and philosophers have had the opportunity of contributing to this stream. For this ability they have needed one requisite—an open mind; for fixed opinions retard the waters of clear-flowing truth.

We recognize with humility that, although truth is eternal, there can be reasonable doubt even as to accepted certainties. An open mind is the bulwark of wisdom. Some one has spoken of the deep slumber of a decided opinion.

Ever so often there is added something to the river of knowledge which broadens the stream.

We behold the men of medicine, who have contributed so largely to this ever flowing and deepening river. Some of these men we classify as fathers of our art, for they contributed to that thinking which in easy stages led to the fuller development of the underlying physical sciences. The oldest treatise that can be classified as a beginning of imparted science, written in Egypt some five thousand years ago, concerned itself with surgery.

Nature, as harsh as she has seemed to man, has always offered the same problems for solution, but man's early interpretations were in a large measure defensive; hence they required adjustment. The chronology of man's escape from the bondage of his ignorance of natural laws is almost as simple as the story of certain individuals whose interpretations of certain facts became the mainspring in changing the thinking and activity of those who could carry on.

CONTRIBUTORS TO KNOWLEDGE

To trace the details of the sequential development of the different sciences is not my purpose. The number of men who have influenced the field of workers has been limited. Geniuses have at all times been terribly misunderstood, handicapped and abused; yet, as God will have it, men arise to interpret the past and to project possibilities for the future.

Apparently there is always a contributor toward the sequence of things. The high points are reached by the interpreters of nature, as disclosed to them by their stimulated senses. But we must not forget that the men who left us our heritage were patient observers; they were willing to repeat their observations, to recheck their conclusions, and to correlate those conclusions with the results of previous researches.

Shortly before his death, Isaac Newton wrote: "I know not what the world will think of my labor, but to myself it seems that I have been but as a child playing on the seashore; ever finding some prettier pebble, or more beautiful shell than my companions, while the unbounded Ocean of Truth lay undiscovered before me." He did not close the door to investigating minds to come. He did see far beyond his own environment and influenced the life of man for all time. Einstein may have changed a fixed conception; but one that was evidently so in harmony with correlated knowledge remains still useful and as yet unbroken.

We have here an illustration of the importance of landmarks. They serve a great purpose, but they should never check the flow of the mind. If a so-called immutable law, such as Newton's, is at variance with the truth, how can any man be intolerant or dogmatic? Schiller suggests that "Truth never is,—always is a-being."

While hurriedly traversing in the most cursory manner both time and its content, to reach a point when medicine became an important branch of the stream of knowledge, we are reminded that the fanaticism of the zealot has been eternally at war with progress; and even in the Reformation, which is the basis of our liberty and of our scientific development, there was great weakness in interpreting the physical status of man. John Stuart Mill says on liberty: "Truth, in the great practical concerns of life, is so much a question of reconciling and combining of opposites that very few have minds sufficiently capacious and impartial to make the adjustment with an approach to correctness; and it has to be made by the rough process of the struggle between combatants, fighting under hostile banners."

As wonderful as the world was to the brilliant Greeks, who had observed the best thought of preceding civilization, their information of scientific value necessarily was exceedingly limited. Yet it is interesting to note that they have been credited with suggesting nearly all of our present-day accepted facts, even that of relativity. It is not my purpose to describe or to delve into the well known causes of their failure. Disraeli, speaking of the successors to the Greeks, said: "The Romans were practical men who practiced the errors of their forefathers."

President's address before the American Medical Association at the Eighty-Third Annual Session, New Orleans, May 10, 1932.

PROGRESS IN SCIENTIFIC IDEAS

Yet it is certain that both science and the true method of science existed in antiquity, without the basic thought being properly developed. It was not so much the errors of the ancient world as the errors of the Middle Ages in interpreting the lore of the ancient world that retarded development. The undue importance assigned to Aristotle held back science during the first century of the Renaissance. William Harvey's book presents an illuminating contrast between the false learning of the Middle Ages and the positive knowledge of modern times. As we approach the twentieth century, when the minute things of this world were revealed and their purposes discovered, the study of physiology was opening new vistas. The wonders of the mechanism of life therein contained only accentuated the ever increasing regard which man must have for his Creator. It is not difficult to understand why mental and spiritual readjustments are all on a higher plane. Our present conception of that Power which governs all is not by any means the same view which the mass of men held not so long ago.

There apparently exists today greater capacity in more places than ever before. Truth in all its ramifications is more willingly viewed from every angle. Our modern facilities for spreading correlated information makes it so.

In our day there has been both liberty and science. There has been opportunity for gaining information of all kinds, and the children of the present have frequently become the teachers of the parent. The kindness of the state has made it easy for parents to conclude that all knowledge, both moral and physical, should become the work of the state, and it is only natural for them to shirk their responsibility. Gradually the social fabric is changed.

This condition is but one of the fruits of our educational system, and similarly the opportunity arises through that system to discourage individualism. If this is true, the effect may tend to paternalism. We who are concerned in preserving the individualism of medical practice in the interest of the people must recognize the danger from any mechanism, whether educational or otherwise, that tends to create a paternalistic interference by the state. While we cannot dam the stream we may divert it, to protect the art of medicine from flood waters.

Science is yet young, and in the days to come there are bound to be radical alterations in our present conceptions, particularly those which concern mind and its place in the scientific scheme.

Change in scientific ideas is counted a distinct progress, while change in religious ideas is looked on in a different way. Change is conceded in the one, fixed opinion in the other. This should not be true. We should never mistake wish for fact. A strong desire is no proof that the object of that desire exists. Widespread application of a correct approach to knowledge, and the study of cause and effect in the underlying branches, have hastened the day of scientific medicine.

The great technological age has brought its joys and sorrows. It has led man to the mountain tops; he has ridden from one oasis to another and sailed from port to port. Our era has exaggerated production and has had to stop for adjustment, thereby distressing the world. Medical men share the world's despair, but as men of science we cannot believe in the inevitability of these unfortunate cycles. Meanwhile, in the present crisis, the training and mental equipment of the diagnostician should make the wise medical man helpful in finding causes of distress and enable him to offer valuable suggestions for relief.

It has been said by Wilde that "Life and the world are not struggling against an alien force, but struggling to overcome simply the past."

When a boy, while in a small church, I saw over the baptistry a great circle with letters in gold saying "God is Love," which emotion in the spiritual world is said to be similar to the action of gravitational force in the physical world. This interpretation was emphasized beautifully by the lowly Nazarene. But God, too, is truth, a creator and scientific maker of law, the manifestation of which, in minutia and in magnitude, is our greatest evidence of this fact. Science, art, religion and philosophy, as well as the human mind, have, we believe, evolved from somewhere and are forever on the way.

Science is striving to interpret and discover, bit by bit, this magnitude of mind, and man is nobler and nearer the Creator by each interpretation thereof—his horizon broadened and his soul awed by the immensity and beauty of this vision.

Truth, that ever elusive force, is difficult to circumscribe—a different point of view, a different mental slant, may destroy that which we believe; yet a broader, deeper interpretation of accepted truths is developed as we willingly submit all suppositions to a searching analysis.

Onward goes the march of the science and art of medicine, eliminating the enemies of man, one or more at a time, binding the wounds and tending the weak, working for a more perfect condition.

Huxley said: "Science inculcates veracity of thought and action, without which there can be no alleviation to the suffering of mankind."

Pasteur said: "The cultivation of science in its highest expression is perhaps more necessary to the moral condition than to the material prosperity of a nation."

THE SCIENTIFIC CULTIVATION OF MEDICINE

Contributing perhaps more than any other factor to the furtherance of this scientific cultivation of medicine is the great channel the American Medical Association affords the different branches of medical knowledge, which collaborate therein, obtaining thereby the best opportunity for the highest development of our art.

This great organization, imbued with this larger conception, centered its attention on education and on what could be accomplished through concerted educational zeal, as one of its chief claims for cooperative effort. So it came to pass that the great motif, from 1847 until now, has been the advancement of the science of medicine through educational achievements, so that both the theory and practice of medicine could be harmonized, through an ever growing art and science, for the good of humanity.

When we speak of the achievements of the American Medical Association, we start with the educational program outlined by our forefathers, recognizing their wisdom and foresight and the fruits of their planting as they were ripened in the most orderly fashion by the astute leaders who have directed and guided the affairs of this great power and body.

Strangely true, most of this monumental work can be seen by these men who have survived and are here to see and enjoy the accomplishments of their planning. One of these men approaches the honorable age of the octogenarian, another has already achieved this

remarkable goal—both are still contributing their unstinted interest and inspiration to the American Medical Association. While personal allusion is unnecessary, any student of our history will recognize these outstanding characters.

No child of this parent body should ever grow so lusty, ambitious or proud as to disturb the confidence in, or function of, this great organization in building reliance in the policies of the profession as a whole. Voluminous data have been furnished me by the heads of the different departments which comprise the American Medical Association, making complete its service. I regret that time prevents me from presenting more of this information. No one man could comprehend the vast endeavors carried on by our organization without devoting time to a daily survey of the work being accomplished. I commend this ever increasing program of service to your attention, hoping that more of our members will visit headquarters and become acquainted with its high purposes and extensive and effective routine. It bridges the chasm between professional accomplishments and public needs.

ACTIVITIES OF THE AMERICAN MEDICAL ASSOCIATION

When the body of American physicians developed our organizations into a representative government, it was made possible for the ideals of the noblest of all professions to evolve in a most orderly manner. It became the duty of THE JOURNAL to mold the minds and develop the aspirations of the medical profession—to guide its hopes and clarify its problems; to give support to all things which elevate the profession.

That this has been accomplished is acknowledged by all who know. Today the greatest medical journal printed in the world is ours. It has its satellites, which illumine all branches of the art and science of medicine, assuring a perpetuation of the hopes and aspirations of those pioneers in our profession who led the way for the organization in special journals, until we were ready to take over their task and make permanent the labor so freely given in the years gone by.

What a vast and beneficent work this organization does for its members! One of the most clarifying yet prosaic printed abstractions, which is so necessary for our common information, is the dignified Medical Directory. It brings to us an intimate knowledge of 156,000 doctors, all based on the most extensive biographic material, which increases with the individuals' activities.

Few of our members realize the world-wide significance of our taking over the important task of publishing the laboriously gathered data into the *Quarterly Cumulative Index Medicus,* which serves the scientifically minded world and is a tremendous aid to research. It records the efforts of medical men appearing in 1,400 journals.

This improved service has made every library more efficient. Medical literature has become more intimate to those interested. This great work is a real contribution of no mean proportion. It is undertaken at an expense far beyond the monetary return and is an outstanding philanthropic activity of the American Medical Association.

At this point, I might call your attention to the ever increasing importance of our effort, through the publication of *Hygeia,* to invade the homes and reach the people of this country in a language easily understood, regarding the health and welfare of the people themselves. If the people were educated in the basic sciences, they would not so readily yield to propaganda harmful to themselves. The truth is easily perverted and pseudoscience is attractive. *Hygeia* fills a need in carrying health messages. While its distribution has reached 60,000 copies a month and it is no longer a financial burden to the organization, its true worth to the public will be better exemplified when ten times this number of copies is printed and read each month.

WORK OF THE COUNCILS

The Council on Medical Education and Hospitals has by study, example and inspection played the leading rôle in developing the present strong group of well established and efficiently operated medical schools. Through its interest in the educational possibilities of the hospital, and its classification of hospitals for interns, it has contributed in a striking manner to the nation-wide improvement of public and private hospitals. Clinical laboratories have also been elevated to a generally acceptable basis. Roentgenologists in our profession have suggested and aided in grading the standards for the x-ray laboratories of the country.

The Council has wisely coordinated all other forces in these fields and has been able to accomplish results through cooperation. Public information about the many conferences has been printed, particularly the regular conferences held each year in which various other bodies, including the Association of American Medical Colleges, the National Federation of State Licensing Boards and the American Hospital Association, have taken part. In this open forum the leaders have been heard, and policies regarding medical education and medical practices have been determined.

The Council is now making a study of mental hospitals and anticipates that it can bring about improvement in this vital and important field.

The leadership exerted by the Council on Medical Education and Hospitals has been of world-wide interest, particularly to those seeking development of higher standards of medical education, correct hospital procedure and a more satisfactory practice of medicine.

Another important council is the Council on Pharmacy and Chemistry. Let me take your thoughts backward to that period from 1900 to 1906 when a most constructive work was initiated, the magnitude of which rises with the increased perspective of the last twenty-five years.

In America, the development of so-called ethical preparations began about 1875 and grew to serious proportions in the first part of this century. The profession was aware that it had no means of determining in which new drugs it could have confidence, claims for which were preposterous even then. The informed public, aided by organized medicine and other agencies, such as *Collier's Magazine* and the following of Dr. Harvey W. Wiley, demanded protection against impure foods as well as drugs. This was a period of crusading for the public's own protection in these health sustaining commodities.

The medical organization and the legislatures became alive to the situation. The passage of the Food and Drugs Act in 1906 was an outgrowth of this agitation. The necessity for this reform is attested by the fact that even in the issues of our own Journal in 1900 may be found the advertisements of seventy-two proprietary preparations. Of these only about 12.5 per cent were subsequently admitted to New and Nonofficial Remedies, and of these nine not a single one is

now included in the book, thus showing how therapeutics has progressed since that time.

The Council has carried on its work for twenty-seven years. It created a set of rules which in essence stands today as a guide to the Council. Thirty years ago the advertising pages of medical journals were not dignified nor creditable. This has all been corrected through the Council's efforts in furthering rational therapy.

In strong contrast, many European journals carry the advertisements of products which are not permitted in our journals. Under the influence of the Council, the profession has become more critical in regard to drugs—and more scientifically minded.

Drug manufacture has been materially benefited by the work of the laboratory. It has caused the directors of pharmaceutic houses to recognize the importance of scientific research and control, so that today most of the pharmaceutic houses have competent research staffs and are adding their contributions to the advancement of materia medica.

This contribution to public service is maintained by the Association as a safeguard to the public.

It is possible that some day the Chemical Laboratory may be enlarged, so that many activities can be broadened; market specimens of accepted drugs should be examined frequently, giving greater assurance of the quality and continued compliance with standards. We should also develop a bacteriologic laboratory which will control and report on the sutures which are used every day by physicians, and which will examine vaccines and serums for purity and potency.

The work of the Council on Pharmacy and Chemistry and the work of the Laboratory has been an altruistic effort in practical education.

The Council on Pharmacy and Chemistry has made the medical profession articulate against the unscrupulous who manufacture and distribute proprietary medical preparations. Without its work, without the cooperation of the fine minds directing the manufacture of medicaments, we would not have the distinction of having accomplished this great program of practical education, which is a program valuable to the public and inspiring to the profession.

Here I would call attention to the fact that each of the councils created by you has a separate fund for making grants for special research. These have been wisely administered. If you will read the report of the Board of Trustees, you will see how far reaching, how helpful and stimulating are these grants of money to the furtherance of medical accomplishments, through which many young minds find material assistance at the most opportune time.

LEGISLATIVE ACTIVITIES

While it is true that medical men in a general way have avoided the legislative halls of this country, it is also true that those who legislate for us cannot deal with matters relating to the public health intelligently without taking council of informed medical opinion. It is conceivable that confusion might be even worse confounded if there were not an organization such as ours to develop policies and indicate our views for the common good of the doctor and the protection of the public.

A legislative committee was created by the last House of Delegates. The cooperation of this committee with members of the American Legion and with the American Hospital Association has already demonstrated the wisdom of exchanging different points of view. Out of the many conferences has grown a permanent committee representing the three organizations, which it is hoped will more sagely guide legislation in the interest of the public as well as the physician. Allow me to suggest that you become thoroughly familiar with this committee's activities. Your active support would be of great value.

The legislative committees of the states should stand ready to cooperate with the central committee created by the House of Delegates, whenever they are called on, making concentrated effort on national legislation when desired.

EDUCATION OF THE PUBLIC

Regarding the education of the public, we conceive it to be our duty to disseminate as much of our knowledge as the people will absorb. We realize human attitudes and aptitudes, and we know that the art of medicine is best expressed in the wise use of the science of medicine.

As to the control of quackery, we have all observed that it is not the quantity of learning that individuals have but the quality they possess which makes it possible for them to differentiate between what is true or false. The most widely read and most expressive editor in the secular press may enlarge on his interpretation of progress, formulating a doctrine dangerous to the health of the community, because he lacks knowledge of the fundamental sciences. It is also true that the exaggerated statements of our co-workers, claiming specific knowledge or new discoveries which have not been proven, are quite as embarrassing. We have a right as physicians to enter a protest against unripe conclusions, hurriedly projected as scientific facts, from either source.

A too ready credence of such statements by both the profession and the public is a compliment to the high place science has reached in the minds of the people. Our chief danger from quackery at this time seems to be from the pseudoscientists and the overambitious, who make exaggerated claims and yet remain in the eyes of the public a part of the scientific world.

The radio, which is capable of bringing happiness and information, is being diverted and prostituted by designing and resourceful charlatans, who enrich themselves at the expense of decency, truth and humanity. The Radio Commission should protect the people who are not able to differentiate for themselves.

We must commend the enlightened secular press, which has made it difficult for quackery to exist. The radio must not be the door to the people which that enlightened press had succeeded in closing.

MEDICAL ECONOMICS

I come now to the Bureau of Medical Economics, which was established to study all the phases of general economics which have a bearing on the practice of medicine. In every consideration of this subject it must be remembered that a profession has for its prime object the service it can render to humanity. Reward for financial gain should be a subordinate consideration. The practice of medicine must remain a profession.

Although business methods and economic principles are essential to an orderly conduct of the financial phase of the practice of medicine, they must serve, rather than dominate, the profession; they must be secondary to the primary object of service, and they must conform to the accepted principles of medical ethics. The principles of medical economics should not be perverted to defend

the borderline activities of the charlatan. There is a vast detail of activity going on in our organization to meet the necessities of the situation. This technological age has brought new conditions and strange fellowships, altogether diverting, and sometimes perverting. I hold that it is within our province to solve all the problems concerned in the practice of medicine. The people await our decision.

If we are to preserve individualism and the fine relation that has ever existed between physician and patient, we must with renewed zeal and exceptional energy seek an answer to the problems which are related to the economic side of the practice of medicine. I shall bring to the attention of the House of Delegates certain matters related to this subject.

FURTHER ACCOMPLISHMENTS

I should now like to direct attention to one of the most important committees connected with the organization—the Council on Scientific Assembly. The gradual improvement of the section programs has been made possible by the larger number of applications for places and the care with which the papers have been selected. The Scientific Exhibit has steadily improved. From now on a greater effort will be made to coordinate the scientific exhibit with the section program. Increasingly popular are those exhibits in which a competent demonstrator remains during the session.

With the proper speakers, the clinical lectures will fulfil a useful function by giving a large number of physicians a chance to hear the practical results of new methods of diagnosis and treatment which have been sufficiently well proved to be of value in everyday work. In a similar manner the public addresses, the valuable scientific contributions being read within the sections, together with the scientific and technical exhibits, produce a tremendous mass attack for enlightenment—an attack which undoubtedly advances the science of medicine, both locally and throughout the nation.

Medicine is popularized; it is brought home to the people; and I am glad to say that our distinguished editor fully appreciates his opportunity. He has cooperated faithfully with the press and has proved to it the value of exact information. This contact is increasingly important, for the responsible press is sincerely interested in the truth.

REMAINING TASKS

So I might go on and on with the accomplishments and possibilities of organized medicine as it is now progressing. We know that there are problems in the process of solution, and that there are others highly important, made more complex through social maladjustments. It is our bounden duty to bring to bear on these problems the best thought of the members of our own profession, men who are guided by education and wisdom based on experience.

We realize that the public weal is the chief concern of our profession, and that there are two methods of approach in the application of medical knowledge to the welfare of the people.

We encourage the graduation of Doctors of Public Health. We continue to educate the majority of medical men for individualistic practice.

There should be no conflict between those who are primarily interested in preventive medicine and those whose lives are devoted more definitely to curative medicine.

The public health officers who best understand the needs of the people jealously direct their departments toward a correction of those errors in sanitation and other community problems which do not fall directly within the scope of the general practitioner of medicine. Medical men wish to cooperate with health officers in protecting humanity from conditions that bring disease, despair and economic disaster.

We believe that far-seeing public health officials want to be of general service and yet not invade the rights and prerogatives of medical men. I take it that I am stating the attitude of those who ought to be able to control the purposes and practices of public health officials.

We, as a profession, must be willing to cooperate and to aid in every manner the education of the public, so that we become a part of the program which contemplates the control and prevention of disease. But this cooperation should lead to an acceptance of the principle that the continued practice of medicine by individuals is most desirable, and should be rewarded through an economic structure which contemplates a definite place for the medical man. His practice should not be invaded from any source.

It is our task through education and established practice to meet the changing conditions and yet to preserve the all-important relationship of the physician and patient.

I come to you as your President with limited time at my disposal. I have given you but a brief exposition of your affairs. The American Medical Association has grown marvelously until now our interest touches the affairs of the nation, as well as the individual citizen. We aim high when we match our patriotism with the brilliant and lofty humanitarianism of our profession.

Our traditions are not in danger but our interest in the problems of the day requires the direction of the combined wisdom of our leaders, whose immediate interest in the science of medicine separates them into scientific groups, and often keeps them out of the council of the organization.

Medicine needs its men, the lowest to the highest. Let no man hide back of his ego and critically deride the profession. Rather let him become an interested worker, and if he has ideas or talent let him assume leadership. He is always welcome.

With the unbounded ocean of truth yet to discover, why take our present status too seriously? The practice of medicine has always been an art. It has developed into a science; science is systematized knowledge. Knowledge is accumulating; its detail is sometimes overpowering; but clinical medicine, when most efficiently practiced, requires that something of the practitioner which is the highest of all arts.

For those in medicine who feel the urge, there is food for both mind and soul. Human need is the great incentive. Impelled as we are by high purposes, this underlying motive binds us to the living. There is some heaven on earth for every sincere physician. There should be a benediction beyond for all who live within the code.

A Remedy for Fear.—The one outstanding condition menacing the mental health of every one, at least apparently of every youth, is some form of the emotion of fear. . . . This is reflected in pessimists and sentimentalists who demand a world according to their own wishes. . . . The great remedy for this fear is the attainment of the scientific attitude, together with the insight that in any case one's task is worth doing.—Burnham, W. H.: The Wholesome Personality, New York, D. Appleton & Co., 1932.

ABDOMINAL PAIN DUE TO HYPOTHYROIDISM

J. WILLIAM HINTON, M.D.
Associate Professor of Surgery, New York Post-Graduate Medical School (Columbia University); Associate Visiting Surgeon, Bellevue Hospital
NEW YORK

Reference has been made by Crile [1] to the association of hyperthyroidism with gastric and duodenal ulcers, but having had an opportunity from Jan. 1, 1928, to Oct. 1, 1931, to observe 444 ulcers in the gastro-enterologic clinic of the Fourth Medical and Surgical Divisions of Bellevue Hospital, my associates and I were unable to detect any patient with an ulcer and a goiter, or with hyperthyroidism. Of the ulcers seen, there were 318 cases in which operation had not been performed and 126 postoperative cases admitted to the clinic. During the past seven years in the thyroid clinics at the New York Post-Graduate Hospital and St. Mark's Hospital, 1,173 cases of goiter have been seen, and in none of these was there a history of pain referable to the stomach or the duodenum. I myself have seen and am familiar with all the aforementioned stomach and goiter cases, and I believe that if Crile's observation were of common occurrence we should have detected it in some of these cases. Verbrycke [2] in a recent article has referred to abdominal pain in association with hyperthyroidism. Any patient suffering from hyperthyroidism of a moderately severe type may have abdominal symptoms manifested in pain, nausea, vomiting or diarrhea, but of course these cases are easily diagnosed, and the abdominal symptoms disappear on correction of the hyperthyroidism.

During the past four years a much more significant observation has been noted in the gastro-enterologic clinic at Bellevue Hospital; patients are frequently referred to the clinic with typical ulcer symptoms and negative roentgen observations, to be treated for an ulcer, and occasionally these patients are found to be suffering from hypothyroidism. As this clinic is a "refer clinic" and the patient is registered only if he has a positive roentgen diagnosis or has been operated on for an ulcer, we have not studied all these cases in detail but have referred them back to the clinic from which they originally came; in a certain selected group, however, in which the patient has been either a hospital employee or a nurse, we have gone into the complaints more carefully and have found that the symptoms suggested a hypothyroidism, and to our gratification there are now six cases under treatment for hypothyroidism in which the complaint was pain referable to the upper part of the abdomen. Brown [3] recently called attention to the effect of hypothyroidism on the gastric and intestinal function, but emphasized constipation as a symptom of the dysfunctioning gland on the gastro-intestinal tract.

The symptoms of hypothyroidism are rather vague and indefinite, and there is no classic group of symptoms for the condition. In the thyroid clinic at the New York Post-Graduate Hospital we have had under observation, during the past fifteen months, seventeen cases of hypothyroidism; the symptoms have been nervousness, irritability, mental depression, instability, dry skin and falling of hair, but pain referable to the upper portion of the abdomen is not the rule in cases with a diminished thyroid secretion. It is the group complaining of abdominal pain, with negative roentgen observations and an associated minus metabolic reading, that will be discussed, and a summary of some of the cases will be given:

CASE 1.—A woman, aged 48, a graduate nurse, seen, May 21, 1931, because of pain in the upper portion of the abdomen, nausea and vomiting, gave a negative history. She had been bothered with abdominal pain, nausea and vomiting for twenty years. Numerous physicians had treated her for nervous indigestion and early ulcer of the stomach, but she had become gradually worse. She was not bothered by constipation. Five years before admission, a roentgenologic examination of the gastro-intestinal tract was done for an ulcer but gave negative results. Again one week before I saw the patient, the gastro-intestinal series was negative, but in spite of the negative roentgen observations she was referred to our clinic for treatment. On being questioned, the patient complained of dry skin, scalp trouble and hair falling out. In the mornings she was tired but felt better after she was up for some time. Physical examination gave essentially negative results except for a blood pressure of 90 systolic and 70 diastolic, dry skin and epigastric tenderness. Hypothyroidism was suspected, and the metabolic rate, June 4, was minus 21. The patient was started on thyroxine, one-sixtieth grain (1 mg.) intravenously every week for eight weeks, and then the dose was reduced to 1 mg. every two weeks, with thyroid extract, 1 grain (0.065 Gm.) by mouth, three times a day. The patient has shown a marked improvement, and the metabolic rate, October 15, was minus 8; the abdominal symptoms have almost entirely disappeared, and the other symptoms have greatly improved, but she is still under treatment.

CASE 2.—A man, aged 58, seen, May 1, 1929, because of attacks of severe upper abdominal pain for two years, gave a negative history. The patient first had an attack of severe upper abdominal pain, which lasted twenty-four hours, two years before consulting the clinic. During this period he had had three other attacks of severe pain and between the attacks had been troubled by gas, indigestion and heartburn after eating, but on being questioned he complained also of lassitude, dry skin which chapped easily, irritability and constipation. The patient was slightly obese being 30 pounds (13.6 Kg.) overweight, with definite tenderness in the right upper quadrant. The roentgenologic examination of the gastro-intestinal tract gave negative results, but the dye test did not visualize the gallbladder. A metabolic reading revealed a rate of minus 16, and in spite of the observations on the gallbladder the patient was given a diet excluding baked beans, peas, lentils, in fact, all legumes; eggs, fish, especially salmon, bluefish, mackerel and herring; brains, shad roe, fat fish, spicy or fat soups, fatty gravies, highly spiced sauces, pickles, radishes, mustard, pickled meats or fish, pickled fruits, acid fruits, rich pastries, candies or cakes, alcoholic drinks, ice water and sodas, cream and fat, and any other heated fats, as in entrées, pastries and the like. The patient was given thyroid extract, 2 grains (0.13 Gm.) three times a day. He has lost 40 pounds (18 Kg.) has not had any complaints in two years, and was symptom free three months after treatment was started. This patient was not given thyroxine intravenously, but the thyroid by mouth was continued for six months; the metabolic determination in March of this year was minus 6, and the patient stated that he was feeling perfectly well.

CASE 3.—A woman, aged 28, a graduate nurse, seen, Aug. 21, 1931, because of abdominal pain after eating, and of nausea and vomiting, gave a negative history. Since she was about 17, she had been bothered with abdominal pain, nausea and vomiting, which had become worse. The pain came on after a heavy meal and was usually worse about 11 p. m., but vomiting gave relief. Ten years ago a roentgenologic examination of the gastro-intestinal tract was done in the Boston City Hospital, and the result was pronounced negative. In spite of medications and a careful diet, her symptoms had become worse, and since May of this year she had had persistent discomfort. In August of this year she had two roentgenologic

1. Crile, G. S.: Factors Influencing the End-Results of Operations for Hyperthyroidism, read before the Medical Society of the County of New York, Jan. 26, 1931.
2. Verbrycke, J. R., Jr.: Masked Gastro-Intestinal Hyperthyroidism: Report of Thirty-Four Cases, J. A. M. A. **97**: 513 (Aug. 22) 1931.
3. Brown, T. R.: The Effect of Hypothyroidism on Gastric and Intestinal Function, J. A. M. A. **97**: 511 (Aug. 22) 1931.

examinations of the gastro-intestinal tract at Bellevue Hospital which were pronounced negative, but because of the history she was referred to us for an ulcer. On being questioned the patient complained of extreme tiredness in the morning, dry skin, brittle nails, loss of hair, and skin chapping easily. A hypothyroidism was suspected, and the metabolic determination, done August 29, revealed a rate of minus 18. Physical examination revealed a dry skin, epigastric tenderness, pulse 64, and blood pressure 98 systolic and 70 diastolic. The patient is now on thyroxine, one-sixtieth grain (1 mg.) intravenously, every seven days, and thyroid extract, one-half grain (32 mg.) three times a day. Her condition at this time has greatly improved; the abdominal pain has diminished, and she has much more energy.

CASE 4.—A woman, aged 35, seen, Aug. 24, 1931, because of abdominal pain, nausea, vomiting and constipation, gave a negative history. She had had abdominal pain and constipation since adolescence, but the conditions had become gradually worse during the past ten years. Because of abdominal pain she was unable to eat heavy, fried or acid foods, and for the past three or four years she had had constant nausea after meals, and frequently vomited if she ate a heavy meal. There was less pain and discomfort after very light meals or when the stomach was empty. She even had no night pain, but constipation was very marked, and only with strong cathartics was a bowel movement possible. She stated that she had been treated for an ulcer of the stomach for several years but said that the condition had gradually grown worse. On being questioned, she complained of mental depression, a very poor memory and extreme nervousness; also, her hair was falling out, the skin was dry and chapped easily, and she objected to cold weather. She was undernourished, weighing 104 pounds (47 Kg.); her best weight was 125 pounds (57 Kg.). The blood pressure was 80 systolic and 60 diastolic, and the pulse was 70. The right kidney was palpable and movable; there was slight epigastric tenderness; the skin was dry, and the reflexes were normal. A diagnosis of hypothyroidism was made, and the basal metabolism, August 25, was minus 17.

The patient was informed of her trouble, and then she volunteered the information that a recent roentgenologic examination of the gastro-intestinal tract had been done; she had been told that a small tumor of the stomach existed and that she needed an immediate operation. Roentgenologic study of the gastro-intestinal tract was repeated and pronounced negative. The patient was given thyroid extract, 1 grain (0.065 Gm.) three times a day, and thyroxine, one-sixtieth grain (1 mg.), intravenously for six doses. October 25, she had gained 6 pounds (2.7 Kg.), and was not tired, nervous or depressed. The constipation had shown some improvement, and the pain, nausea and vomiting had practically disappeared, but she is still under treatment.

The symptoms in the foregoing cases were so suggestive of an ulcer that all diagnostic methods and treatment had been directed to the gastro-intestinal tract. The conditions found were probably due to a hypoperistalsis with a pylorospasm and retention of undigested food in the stomach; after the patient vomited the retained food, or the stomach slowly emptied, the symptoms were relieved.

The other patients gave essentially the same history and are improving on thyroid medication.

COMMENT

It is my desire to call attention to hypothyroidism as a factor in producing abdominal pain, and to emphasize that patients giving negative roentgen evidence of changes in the gastro-intestinal tract, the gallbladder and the genito-urinary region, as well as negative results in the other laboratory procedures, may in a small percentage of cases be suffering from hypothyroidism; in this group with negative roentgen observations a metabolic determination should be done before any treatment is instituted or before the patients are submitted to an exploratory laparotomy, as occasionally a diagnosis will be established and the symptoms relieved with thyroxine and thyroid extract, the patient being saved a needless operation. There seems little question that, in the past, probably quite a few exploratory procedures have been undertaken with negative results or at least with symptoms persisting after the operation, in which case the entire trouble was referable to the thyroid gland.

I do not want to leave the impression that all patients with abdominal pain in which the roentgenologic observations are negative are suffering from hypothyroidism, for such is not the case; but if this condition is borne in mind a definite diagnosis can be made in a small percentage of cases, and the individual can be benefited by the proper medication. On the other hand, a patient may have a minus metabolic rate and a definite intra-abdominal lesion which will need either medical or surgical treatment. Of course, no benefit could be expected from the abdominal pain by treating the hypothyroidism and neglecting the other condition that is actually causing the pain. I have such a case under observation at this time; the patient is waiting to have a cholecystectomy in the near future for the relief of abdominal pain, but her symptoms of lassitude, constipation, irritability and mental depression have improved on thyroxine intravenously and thyroid extract by mouth.

125 East Seventy-Second Street.

TREATMENT OF OLDER DIABETIC PATIENTS WITH CARDIOVASCULAR DISEASE

SOLOMON STROUSE, M.D.
SAMUEL SOSKIN, M.D.
LOUIS N. KATZ, M.D.
AND
S. H. RUBINFELD, M.D.
CHICAGO

In the past few years, arteriosclerosis and heart disease have become increasingly prominent as causes of death in diabetes mellitus. A recent article by Joslin [1] starts with the words "Every other diabetic now dies of arteriosclerosis, and the percentage of such cases has been rapidly rising." In the period between 1894 and 1914, 15 per cent of the total number of deaths of diabetic patients in Joslin's series of 342 deaths were due to arteriosclerosis; in the period 1926-1929, the death rate from arteriosclerosis had risen to 48 per cent. The coma death rate, during the same period, had dropped from 61 per cent to 11 per cent. The organ most frequently involved by the arteriosclerotic process in Joslin's series is the heart (43.1 per cent of all arteriosclerotic deaths). Similar statistics have been published by Warren,[2] Wilder,[3] Root and Graybiel,[4] Blotner [5] and Nathanson.[6] Coronary sclero-

From the Max Pam Metabolism Unit and the Heart Station, Michael Reese Hospital.
Aided by Max Pam Fund for Study of Metabolic Diseases and the Emil and Fanny Wedels Fund of the Michael Reese Hospital for the Study of Diseases of the Heart and Circulation.

1. Joslin, E. P.: Arteriosclerosis in Diabetes, Ann. Int. Med. **4**: 54 (July) 1930.
2. Warren, Shields: The Pathology of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1930.
3. Wilder, R. M.: Necropsy Findings in Diabetes, South. M. J. **19**: 241 (April) 1926.
4. Root, H. F., and Graybiel, Ashton: Angina Pectoris and Diabetes Mellitus, J. A. M. A. **96**: 925 (March 21) 1931.
5. Blotner, Harry: Coronary Disease, New England J. Med. **203**: 709 (Oct. 9) 1930.
6. Nathanson, M. H., to be published.

sis, coronary thrombosis, infarction of the heart and varying degrees of myocardial degeneration are common pathologic manifestations in the group of diabetic patients who die of cardiac complications.

Careful analysis of the published statistics seem clearly to involve the disease diabetes as an etiologic factor in the production of arteriosclerosis. A statistical study by Levine [7] led him to believe that diabetes is a common cause for coronary thrombosis. In Levine's group of 145 cases, approximately 23 per cent showed glycosuria. It is, of course, recognized that the prolongation of life brings more individuals to the arteriosclerotic age, but comparative statistics and autopsies performed on diabetic and nondiabetic patients show that the incidence of arterial disease in the diabetic is considerably greater than in the nondiabetic patient. Nathanson has studied two series and finds that in 100 autopsies on diabetic patients 41 showed severe coronary disease. Above the age of 50 the incidence of coronary disease was 52.7 per cent, as compared with 8 per cent in an even larger series of nondiabetic patients of the same age.[8] Furthermore, in diabetic patients the incidence of coronary disease in the female is almost as high as in the male, as compared with the ratio of 1 : 3.5 in Levine's nondiabetic series. But perhaps the most convincing evidence that diabetes is an etiologic factor in arteriosclerosis is furnished by a study of the frequency of arteriosclerosis in younger diabetic patients. Shepardson [9] emphasizes the incidence of arteriosclerosis in diabetic patients under 40. The minimum duration of the disease in these cases was five years. It is true that the evidence furnished by Shepardson's studies is not final, as his conclusions are based almost entirely on evidence furnished by roentgen studies of the arteries during life. Nevertheless, of fifty patients studied with an average age of 23.4 years and an average duration of the disease of 6.9 years, he found peripheral arteriosclerosis in 36 per cent of his patients with an average age of 25.4 years and an average duration of the disease of 7.6 years. Joslin,[1] too, has called attention to the incidence of arteriosclerosis in the young whose diabetes has lasted from five to ten years.

The change in the cause of diabetic death from coma to coronary disease definitely followed the introduction of insulin. Insulin has made coma an almost completely preventable cause of death, as is witnessed in the Joslin series, in which the rate changed from 61 to 11 per cent. Yet a paradoxical situation now has arisen in that insulin has been accused of being responsible for some of the cardiac deaths in diabetes. The evidence involving insulin is both clinical and experimental. Turner [10] and Modern [11] have discussed the "heart-pain" due to insulin shock and hypoglycemia. Middleton and Oatway [12] thoroughly reviewed the literature on the experimental aspects of this subject and themselves added further studies to show that insulin shock presents a real hazard to the heart. They strongly urge that insulin shock and hypoglycemia should be avoided in the presence of any type of myocardial involvement. Parsonnet and Hyman [13] described the development of the stenocardial syndrome following the administration of insulin to diabetic patients with coronary thrombosis. Their communication is particularly important because in the four cases reported by them no symptoms of coronary disease were present before the administration of insulin, and in only one patient, a very large overweight woman, had there been any previous suggestion of heart disease. These authors also mention three other diabetic patients who developed milder symptoms of angina without electrocardiographic evidence of coronary thrombosis, following the use of insulin. Blotner [5] concluded that acidosis and a rapid lowering of the blood sugar level with insulin play contributory parts in inducing mortalities in coronary thrombosis.

The question of proper therapy of the diabetic patient with vascular disease has received very little experimental study. As a result of their experiences with insulin shock and hypoglycemia, some authors, as Middleton and Oatway,[12] advise caution in the therapeutic use of insulin in such cases. But granting that insulin shock and hypoglycemia are dangerous, we do not know whether the continued use of insulin as a therapeutic procedure in doses small enough to avoid abnormally low blood sugar levels carries with it a similar menace to the cardiovascular system of this class of patients. The more rigid control of the metabolic manifestations of diabetes, made possible by insulin, has emphasized the clinical observation that during such treatment the patient may grow worse as the diabetes improves. The lack of experimental evidence concerning this increasingly important therapeutic problem has led us to the present investigation. Since all previous experimental work dealt almost entirely with acute insulin shock or with the effects of acutely produced hypoglycemia, we felt that it was necessary to emphasize the long term, therapeutic experiment.

PROCEDURE

We studied seven patients with diabetes and clinical evidence of coronary sclerosis or angina pectoris. All these patients were placed in the Max Pam Metabolism Unit of the Michael Reese Hospital under conditions approaching laboratory control. Their cardiac status varied from complete well being to mild congestive failure while at rest. Their diabetic status also varied from mild to moderately severe. Cases of mild and severe Heberden's angina pectoris were included. Each patient was kept for from two to four weeks on a given diet which permitted his accustomed high blood sugar level and glycosuria, no attempt being made to control the diabetic manifestations to a greater extent than was usual with that patient. This period was followed by a similar period in which the diet remained unchanged but insulin was used in therapeutic doses (from 30 to 70 units daily). The blood sugar was kept at a low normal level and at no time was sufficient insulin given to produce persistent hypoglycemia. In other words, during the latter period, these patients received a moderately strict treatment for their diabetes without regard to their cardiovascular status. We wish to emphasize again at this point that the nature of these experiments was distinctly therapeutic; we wanted to learn the reaction of these cardiovascular diabetic patients to treatment aimed entirely toward the improvement of their diabetes.

7. Levine, S. A., and Brown, C. L.: Coronary Thrombosis: Its Various Clinical Features, Medicine **8**: 245 (Sept.) 1929.

8. Nathanson, M. H.: Disease of the Coronary Arteries: Clinical and Pathological Features, Am. J. M. Sc. **170**: 240 (Aug.) 1925.

9. Shepardson, H. C.: Arteriosclerosis in the Young Diabetic Patient, Arch. Int. Med. **45**: 674 (May) 1930.

10. Turner, K. B.: Insulin Shock as the Cause of Cardiac Pain, Am. Heart J. **5**: 671 (June) 1930.

11. Modern, F. S.: Chronic Heart Pain Due to Prolonged Hypoglycemia, J. A. M. A. **96**: 357 (Jan. 31) 1931.

12. Middleton, W. S., and Oatway, W. H., Jr.: Insulin Shock and the Myocardium, Am. J. M. Sc. **181**:39 (Jan.) 1931.

13. Parsonnet, A. E., and Hyman, A. S.: Insulin Angina, Ann. Int. Med. **4**: 1247 (April) 1931.

In addition to the foregoing experiments a set of acute experiments was performed in which each patient, after a careful period of observation, received one large dose of insulin. The results of the acute experiments form a basis for comparing our work with previously reported studies. The observations made after the insulin injection included the effect of the intravenous injection of dextrose.

RESULTS

The results summarized here are concerned chiefly with observations on the heart. More comprehensive studies of the cardiovascular system are projected. The complete details and the experimental data collected from this series of patients on changes in blood pressure, pulse rate, cardiac rhythm, electrocardiogram and metabolism will be reported elsewhere. In the present report we wish to make a brief summary, and since the results following the acute experiments are the more striking, they will be given first.

Objective Phenomena.—After insulin the blood pressure tended to fall, the heart rate to increase, extrasystoles of various origins were induced, and in one case a run of paroxysmal auricular fibrillation was initiated. Some or all of the typical symptoms of insulin shock were observed, and in two cases typical attacks of angina pectoris were precipitated.

The electrocardiogram showed, in brief, a decrease in amplitude, slight prolongation and increased slurring of the Q-R-S complex, increase in the deviation of the S-T segment in a direction opposite to the major initial complex, and a prolongation and deviation of the T wave in a direction opposite to the major initial complex, occasionally going so far as to produce a change in its direction. We interpreted these changes as indicative of the development of intraventricular block. Intravenous administration of dextrose always alleviated the symptoms and restored the electrocardiogram to its original contour.

These results can be correlated with a previously reported inversion of the T wave caused by insulin. The fact that the T wave became more positive or changed from a negative to a positive deflection when the initial complex was inverted shows that the inversion of the T wave in such cases is a sign of slowing in intraventricular conduction. In one case in which a striking attack of angina was precipitated, changes in the electrocardiogram similar to those described during such attacks (Wood, Wolferth and Livezey;[14] Feil and Siegel[15]) were noted even before the symptoms appeared.

The effects observed in the therapeutic experiments were similar to but of lesser magnitude than those just reported. The blood sugar level was maintained below that to which the patients were accustomed, and the doses of insulin used did not produce persistent hypoglycemia. A constant slowing of heart rate occurred, and extrasystoles and electrocardiographic changes similar to those described in the acute experiments were noted. The magnitude of the electrocardiographic deviations in the therapeutic experiments did not depend entirely on the absolute level at which the blood sugar was maintained. The length of time over which insulin was administered and the extent of the change from the accustomed blood sugar level to the new level seemed to be important factors.

Subjective Phenomena.—In all patients particular attention was paid to the subjective symptoms during the therapeutic experiments. It is known, of course, that patients may have mild anginal attacks without tangible objective signs, and it is not always easy to decide whether pain is truly anginal in type. Almost invariably during the period of insulin administration the patients complained of a decreased sense of well being. The usual complaints were weakness, prostration, dizziness, nervousness, palpitation, precordial pain and constriction and, in some cases, typical angina pectoris. One patient refused to continue on the insulin period as he said that he "felt bad all the time." It was interesting to note that these symptoms occurred at blood sugar levels compatible with complete comfort in younger diabetic patients. The interpretation of symptomatology uncontrolled by such objective data as we collected would be difficult. But in view of the fact that the patients' complaints and the objective manifestations were so well correlated, the symptoms must be accepted as important.

One case, of a woman in her late fifties, is of unusual interest and is important for two reasons. First, she had mild diabetes, frequent attacks of angina pectoris associated with paroxysmal auricular fibrillation, and no evidence of coronary thrombosis. This unusual combination made it possible to correlate the subjective complaints with the objective demonstrable phenomena. Second, because of the mild diabetes she was given no insulin at any time during the therapeutic experiment, her diabetes being controlled by diet alone. This made it possible, in reviewing our results, to evaluate the direct effects of insulin on the heart as opposed to the effects of the metabolic changes induced by insulin.

On a diet of protein 50, fat 100, carbohydrate 50, which for purposes of comparison we shall call a low carbohydrate diet, she had frequent attacks of angina pectoris and paroxysmal auricular fibrillation. During this time she would have attacks even when at rest in bed in her room. The substitution of an isocaloric comparatively high carbohydrate diet of protein 50, fat 50, carbohydrate 160 caused an immediate and complete cessation of the attacks. This is especially significant, since her fasting blood sugar was on the average only about 20 mg. per hundred cubic centimeters higher during the high carbohydrate diet than during the low carbohydrate diet. On the latter diet she remained in bed without protest. In fact, during one experimental period of low carbohydrate diet, her attacks became so severe and frequent that this diet had to be discontinued. In marked contrast to this is the difficulty we experienced in keeping her in bed during the high carbohydrate regimen. Indeed, her only attack while on the high carbohydrate diet was precipitated when she walked down a long hospital corridor and up several stairs in order to use a telephone. The contrasting effects of the two diets were confirmed by repetition. This case showed, in a most striking way, that all the phenomena following the use of insulin noted in the other therapeutic experiments could be reproduced by the use of a low carbohydrate diet alone.

The acute experiment with insulin on this woman yielded completely confirmatory results. It was carried out after a prolonged period of high carbohydrate diet. At the time of the acute experiment she was in excellent condition, having had no anginal attacks nor any abnormal cardiac rhythm for a month. Fifty

14. Wood, F. C.; Wolferth, C. C., and Livezey, Mary M.: Angina Pectoris, Arch. Int. Med. **47**: 339 (March) 1931.
15. Feil, H. S., and Siegel, M. L.: Electrocardiographic Changes During Attacks of Angina Pectoris, Am. J. M. Sc. **175**: 255 (Feb.) 1928.

minutes after the administration of 25 units of insulin subcutaneously, she complained of precordial pain, which soon radiated to the left arm. Simultaneously with the appearance of angina there developed a paroxysm of auricular fibrillation interspersed with ventricular extrasystoles. This irregularity was shown by the electrocardiogram taken at the moment she first complained. It is interesting to note that the typical electrocardiographic changes usually seen during angina pectoris appeared in the records taken during this experiment even before the pain developed.

Thirty-five minutes after the beginning of this induced attack the patient was given 3 ounces of orange juice and 3 teaspoonfuls of cane sugar by mouth, followed by an intravenous injection of 50 cc. of 50 per cent dextrose solution. Five minutes after the injection was completed, the pain had disappeared and the electrocardiogram showed a regular but rapid rate, a sinus tachycardia. The auricular fibrillation soon returned and lasted until the following morning, but no further pain was experienced. The similarity of effects during the acute and the therapeutic experiments on this patient is apparent.

COMMENT AND SUMMARY

The results obtained in the acute experiments agree with those previously reported, as to the deleterious effects of insulin hypoglycemia on the heart. The risk incurred by insulin "shock" in older diabetic patients with cardiovascular disease need not be enlarged on.

Our long term therapeutic experiments show that insulin, in the usual therapeutic doses, presents a similar hazard to the hearts of such patients. The objective data obtained from our patients can be closely correlated to their subjective complaints and indicate a real basis for the latter. This accords very well with the previously mentioned clinical observation that such patients may grow worse as their diabetes improves and may explain why it is so difficult to frighten or cajole such a patient into following a regimen strict enough to maintain his blood sugar at a level ordinarily considered normal. It is possible that, for such patients, the higher blood sugar levels usually found do represent the "normal" or perhaps optimum value, as far as their cardiovascular state is concerned. Smith, Gibson and Ross,[16] among others, have shown the beneficial effects of carbohydrate administration in heart failure in the nondiabetic patient. The deleterious effects of the therapeutic use of insulin in our cases did not seem to depend so much on the absolute level of blood sugar attained as on the extent of the change from the accustomed to the new blood sugar level and on the length of time over which the insulin was administered.

The case described, in which the results obtained with insulin were reproduced by the use of a low carbohydrate diet alone, indicates that insulin is not the only factor to be considered if one is to avoid endangering the damaged heart. The blood sugar level and the carbohydrate available for the use of the diseased myocardium must be important and may be the essential factors involved. The diet is therefore of paramount importance whether the patient is given insulin or not.

The increasing incidence of heart disease as the cause of death in diabetic patients should serve as a warning that the needs of the impaired myocardium must not be forgotten in efforts to control the metabolic manifestations of diabetes.

16. Smith, F. M.; Gibson, R. B., and Ross, Nelda G.: The Diet in the Treatment of Cardiac Failure, J. A. M. A. **88**: 1943 (June 18) 1931.

ULCERATIVE COLITIS DUE TO CHRONIC INFECTION WITH FLEXNER-Y BACILLUS

REPORT OF CASE WITH CURE BY AUTOGENOUS VACCINE

THOMAS T. MACKIE, M.D.
NEW YORK

The relative frequency and severity of chronic ulcerative colitis and the difficulties of its successful treatment warrant the report of instances that may throw light on the condition. Experience indicates that it is a disease without distinctive tissue changes, which may be associated with a variety of different organisms. Since the Great War several English observers have emphasized the apparent relationship to antecedent amebic or bacillary dysentery, especially when the acute phase has been improperly or insufficiently treated.[1] In certain instances the chronic condition is attributed to the presence of secondary invaders in the wall of the bowel;[2] in others to the persistence of the dysentery bacilli themselves.

The possibility that at times the latter organisms may play an important rôle meets four important objections. The onset of chronic ulcerative colitis is usually insidious and not apparently related in time or in fact to an antecedent acute intestinal disease. The appearance of cases is sporadic. The dysentery bacilli can rarely be recovered from these cases. And, finally, the disappearance of epidemic dysentery, except under the unusual lack of sanitation associated with war conditions, has led to the widespread belief that the disease has become a rare condition in the more settled and highly developed parts of the world.

Clinically, acute bacillary dysentery may be roughly divided into two groups, the Shiga infections, usually associated with a severe illness, and those due to Flexner-Y and other strains, which characteristically induce only a mild condition which may be so trivial as to escape particular notice. Zinsser[3] calls attention to the fallacy of considering the disease one that occurs only in epidemic forms. Certain of the dysentery bacilli may cause only mild intestinal inflammations and even simple diarrheas. It is probable, moreover, that many of these transitory diarrheas occurring sporadically and in small groups may depend on unrecognized infection by these organisms. During the war, 75 per cent of the mild cases were found to be due to the Flexner-Y bacilli. The Y bacillus particularly has been found in cases of infantile diarrhea. Furthermore, the persistent carrier of these organisms is generally in fairly good health and able to carry on his occupation until subjected to adverse conditions which may precipitate a further recurrence. Not only, therefore, may attacks of Flexner dysentery be so mild as to escape comment at the time, but, because of the lack of severity, little if any importance may be attached to them in the study of a later chronic disease.

Investigations carried out during the World War indicated that the Flexner group is universally dis-

Read before the Section of Medicine, New York Academy of Medicine, Feb. 16, 1931.
From the Department of Medicine of the Presbyterian Hospital and the Columbia University College of Physicians and Surgeons.

1. Dudgeon, L. S.: Ulcerative Colitis, Proc. Roy. Soc. Med. (Sect. Surg.) **16**: 104, 1923. Hurst, A. F.: Ulcerative Colitis, ibid., p. 106. Lockhart-Mummery, J. P.: Ulcerative Colitis, ibid., p. 97.
2. Sellards, A. W.: Bacillary Dysentery, in Oxford Medicine, New York, Oxford University Press **4**: 767-781, 1921.
3. Zinsser, Hans: A Textbook of Bacteriology, ed. 6, New York, D. Appleton & Co., 1930, pp. 594-610.

tributed, but that Shiga infections are usually acquired only in tropical or subtropical countries. In Belgium the epidemics in the armies were almost entirely due to the Flexner-Y group.[4] Recently the disease has been reported to be endemic in the southern part of the United States and to be increasing in frequency.[5]

The recovery of these organisms from cases of chronic ulcerative colitis is not usual, and this has led to the impression that although the disease may follow on acute bacillary dysentery, the relationship between them is indirect. The excretion of the bacilli, however, by the chronic carrier is apt to be intermittent, and, in fact, intermittence is described as one of the characteristics of long-standing infection. The organisms may be found in the stools for one or two days in succession, to be followed by an interval of four or five weeks when all bacteriologic examinations of the feces are negative.[6] Martin and William [7] found that only 15 per cent of the initial stool cultures from cases of chronic dysentery were positive. It has further been shown that the Flexner bacilli are almost twice as difficult to recover as are the Shiga organisms. The difficulty of demonstrating the dysentery bacilli in the excreta emphasizes the importance of swab cultures from the floor of the ulcerated areas in the colon and rectum. Positive cultures may be obtained by the latter method when the stools are persistently negative,[8] but a single negative culture cannot be accepted as evidence sufficient to exclude a dysenteric infection. While the factor of intermittence may therefore play a large part in the difficulty of demonstrating the bacilli, certain of their biologic characteristics are of importance as well. Their viability in stale stools is much limited, and in scanty infections, unless a selective medium is used, they are easily overgrown by other organisms.

Agglutination tests, when stock cultures are used, cannot be depended on as a means of diagnosis or as an accurate method of eliminating the possibility of infection. Fildes [9] found that only 60 per cent of the patients with chronic, convalescent or cured Shiga dysentery who were still excreting the bacilli possessed agglutinins in significant amounts for these organisms, and similarly among the Flexner cases only 20 per cent gave significant agglutination reactions.

While the relationship between chronic dysentery and chronic ulcerative colitis is not direct or evident in many instances, neither is the distinction between them well defined. The differentiation has necessarily been based on the results of culture and agglutination reactions which cannot be accepted as definite unless consistently and repeatedly negative. Hurst [10] has emphasized the fact that the two conditions are indistinguishable in appearance both at autopsy and in life through the sigmoidoscope. Menon [11] in India found that 60 per cent of fatal cases of chronic colitis or chronic diarrhea of indefinite origin present lesions with a strong morphologic resemblance to those of chronic dysentery. Lockhart-Mummery [12] also states that the chronic conditions following on acute amebic or bacillary dysentery do not differ in any way from the ordinary cases of ulcerative colitis endemic in England and the United States. Bastedo [13] has suggested the probability that many of them, if properly studied, would fall within the group of bacillary infections.

The lesions of chronic dysentery are restricted to the lower half of the colon and characteristically consist of serpiginous ulcers. They are distributed transversely to the long axis of the intestine on the free edge of the transverse folds of the mucosa. The edges are usually undermined and ragged, and the base is formed by granulation tissue. Often they are intercommunicating. The intervening mucosa is usually hyperemic and bleeds easily on contact. Healing is accompanied by scarring and frequently by pigmentation.

There is a widespread impression that the acute phase terminates the disease and that chronic dysentery due to the persistence of the bacilli is a rarity. The infection may persist, however, with remissions of varying length for from one to several years, as commonly happens with amebic disease. It is variously estimated that from 2 to 5 per cent of the acute cases become chronic.[14] Fletcher and Mackinnon [6] found 52 chronic carriers of Flexner and 13 of Shiga bacilli among 935 soldiers convalescent from bacillary dysentery. More than 20 per cent of the convalescents from whom Flexner organisms were recovered, and all the Shiga cases carrying bacilli, became persistent carriers. Most of the chronic cases in this group had presented recurrent attacks over long periods of time, and relapses were frequent in these long established infections. In a study of chronic dysentery in Peiping, Smyly [8] recovered B. dysenteriae from fifty-six patients. Mannite fermenting bacilli were found in 54 per cent, Shiga bacilli in 32 per cent, and the remaining 14 per cent had double infections. Castellani,[15] Hudson,[16] Maggi [17] and Bastedo [13] have all reported chronic cases due to continued infection by members of the mannite fermenting group, usually the Flexner bacilli, and recently in New York Winkelstein [18] recovered Flexner or Shiga organisms from four cases of chronic ulcerative colitis.

Vaccines, both stock and autogenous, have been used from time to time in the past, but often with contradictory or equivocal results. Manson-Bahr and Gregg [19] summarize the failures by stating that the ineffectiveness of this form of treatment depends on the minor rôle which the dysentery bacilli play in the later stages of the disease. Some observers hold that vaccinotherapy may be definitely harmful, and others do not

4. Nolf, P.: Vaccinotherapy in Acute and Chronic Bacillary Dysentery, J. A. M. A. **73:** 1177-1179 (Oct. 18) 1919.

5. Silverman, D. N., and Feemster, Roy: Types of Bacterial Dysentery in the South: A Clinical and Bacteriological Study, South. M. J. **24:** 504-507 (June) 1931.

6. Fletcher, W., and Mackinnon, D. L.: A Contribution to the Study of Chronicity in Dysentery Carriers, Medical Research Committee, Special Report Series No. 29, 1919. Douglas, S. R.; Colebrook, L., and Morgan, W. P.: Report on a Series of Cases of Dysentery Received from the Mediterranean Expeditionary Force, ibid., No. 6, 1917.

7. Martin, C. J., and William, F. E.: The Chances of Recovering Dysentery Bacilli from Stools According to Time Elapsed Since Onset of Disease, Brit. M. J. **1:** 447 (April 20) 1918.

8. Smyly, H. J.: The Diagnosis and Treatment of Chronic Dysentery, Tr. Roy. Soc. Trop. Med. & Hyg. **24:** 39-66 (June) 1930.

9. Fildes, P.: Reports on Investigations in the United Kingdom of Dysentery Cases Received from the Eastern Mediterranean: III. Report on Recovered Cases of Intestinal Disease in the Royal Naval Hospital, Haslar, 1915-1916, Medical Research Committee Special Report Series No. 6, 1917.

10. Hurst, A. F.: Ulcerative Colitis, Lancet **1:** 1007 (May 19) 1923.

11. Menon, T. B.: The Pathology of Chronic Colitis in the Tropics, Indian J. M. Res. **18:** 137-141 (July) 1930.

12. Lockhart-Mummery, J. P.: Ulcerative Colitis, Proc. Roy. Soc. Med. (Sect. Surg.) **16:** 104, 1923.

13. Bastedo, W. A.: Our Northern Chronic Dysenteries, M. J. & Rec. **120:** 201-205 (Sept. 3) 1924.

14. Rajchman, L., and Western, G. T.: Reports on Investigations in the United Kingdom of Dysentery Cases Received from the Eastern Mediterranean: II. Report on 878 Cases of Bacillary Enteritis, Medical Research Committee, Special Report Series No. 5, 1917. Fildes (footnote 9). Davison, W. C.: A Bacteriological and Clinical Consideration of Bacillary Dysentery in Adults and Children, Medicine **1:** 389-510 (Nov.) 1922.

15. Castellani, Aldo: Cases of Pseudo-Sprue Probably Due to a Flexner-Like Bacillus, J. Trop. Med. & Hyg. **15:** 337-338 (Nov.) 1912.

16. Hudson, N. P.: A Case of Persistent Infection with B. Dysenteriae (Flexner), J. A. M. A. **79:** 1676-1677 (Nov. 11) 1922.

17. Maggi, A.: Un cas de dysentérie par bacille para-dysentérique, Bol. sez. ital. Soc. internaz di microbiologia **1:** 106 (May) 1929.

18. Winkelstein, Asher: The Nature and Treatment of Nonspecific Ulcerative Colitis, New York State J. Med. **31:** 1400 (Nov. 15) 1931.

19. Manson-Bahr, P., and Gregg, A. L.: The Pathology and Treatment of Chronic Bacillary Dysentery, J. State Med. **32:** 356-366 (Aug.) 1924.

recommend it. Van Nitsen [20] found a higher mortality among a group of cases treated by a mixed vaccine of Shiga and Flexner bacilli than in a similar series treated by medical measures alone. At times, vaccines are said to cause dangerous focal reactions,[21] and Rogers [22] has reported massive gangrene of the bowel and exacerbation of the existing condition. This he attributes to the endotoxin of the Shiga bacilli and to the possible development of a negative phase. On the other hand, autogenous vaccines are said to have little effect.[23]

However, there are numerous reports of the successful use of this form of treatment.[24] Nolf found that intravenous injections in increasing doses from 1 to 10 millions gave the best results in chronic Flexner infections. Others using this method, but in doses up to 60 millions, report that rigors, pyrexia and marked clinical improvement resulted. The subcutaneous route is said to be less effective, but recently a stock vaccine which is agglutinated by the patient's serum has given excellent results.

It would appear, therefore, that the conflict of opinion depends on the selection of cases, the type of vaccine used, the dosage, and the duration of treatment. Success is to be expected only in the individuals having a continued infection by the dysentery bacilli and not in the cases of remote secondary infection. In many instances in which the results have been unfavorable or inconclusive the dosage was small, the intervals long, and the treatment not long continued. Autogenous vaccines have not been fully tested, but the weight of evidence indicates that this form of therapy has a definite place and usefulness, that the vaccine probably should be autogenous, and that it should be continued in adequate dosage over a considerable period of time.

REPORT OF CASE

A clergyman, aged 64, first seen in 1927 because of attacks of syncope and dyspnea on exertion, was slightly overweight, plethoric in appearance, and presented a moderate cardiac enlargement. The blood pressure was 150 systolic and 90 diastolic. The electrocardiogram showed a moderate left-sided preponderance. The blood count at this time showed: hemoglobin, 100 per cent; red blood cells, 4,800,000; white blood cells, 14,800; polymorphonuclears, 68 per cent; lymphocytes, 30 per cent; eosinophils, 2 per cent. He progressed satisfactorily on small doses of digitalis and restriction of activity.

In June, 1928, he was admitted to St. Luke's Hospital complaining of a slight purulent discharge from the rectum and the occasional presence of small amounts of blood in the stools. A fistula in ano was found extending upward for an inch and a half from the sphincter, just deep to the mucous membrane. The tract was excised and recovery was uneventful.

He was not seen again until May, 1929, when he returned stating that for the past two months he had had "colitis." This was characterized by profuse watery diarrhea containing flocculent material but no gross blood or mucus. On the rare occasions when the stools were formed, small amounts of mucus were present but never blood. He had been afebrile but suffered more or less from lower abdominal pain and especially from exhaustion and prostration. At this time a history was obtained which had not been elicited on the previous contacts with him.

In 1923, while on a trip around the world, he had a severe attack of diarrhea in Shanghai. He was ill for ten days but did not have fever. Shortly afterward on reaching India, he had a recurrence which kept him in bed for two weeks and necessitated alteration of his itinerary. Again the attack was afebrile. The stools were very loose, yellow and numerous. During the next two years in New York attacks of diarrhea recurred at frequent intervals, and he stated that he seldom had an entirely normal stool. He was able to carry on his parish work, however. In 1925, while on a trip through the Mediterranean, he had another severe attack in Jerusalem, lasting a week, and subsequently another recurrence of the same duration in Athens. The stools again were watery and the attacks afebrile but accompanied by much prostration.

During the next four years, periods of diarrhea recurred at frequent intervals but never of sufficient severity to cause him to seek medical advice. The longest free interval was of only a few months' duration, and during this period he became progressively lacking in energy and strength.

In May, 1929, he was given camphorated tincture of opium, bismuth subcarbonate, and a bland low residue diet. These measures were only partially successful, since omission of the medication was immediately followed by recurrence of the diarrhea. He showed some loss of weight, appeared a little pale and was obviously worn out. The cardiac diameters were slightly increased and the blood pressure had fallen to 124 systolic and 80 diastolic. Definite tenderness was present over the course of the descending colon and the sigmoid. Rectal examination was negative. Roentgen examination of the colon showed the barium sulphate to flow freely through to the cecum. No evidence of a malignant condition was found, but the sigmoid and the lower portion of the descending colon were quite smooth, showed few haustrations, and were definitely spastic. The hemoglobin was 83 per cent and the red cell count 3,480,000. The white count was 8,900 and the differential formula: polymorphonuclears, 73 per cent; lymphocytes, 23 per cent; eosinophils, 3 per cent, and monocytes, 1 per cent. The stained film showed anisocytosis and poikilocytosis with occasional polychromatophilic cells. The platelets appeared to be reduced in number.

The patient was readmitted to St. Luke's Hospital under the care of Dr. Lewis F. Frissell. A week after the previous examination the hemoglobin was 92 per cent and the red blood count 3,200,000. Gastric analysis after the test meal showed free hydrochloric acid to be absent and total acid 4. A roentgen examination of the gastro-intestinal tract showed no evidence of a malignant condition. Stool examination for monilias was negative by smear and culture. No amebas were present and the test for occult blood was negative. Culture of the stool for Flexner and Shiga bacilli was negative. The patient was immediately placed on a liver diet and a week later on Eli Lilly Liver Extract and hydrochloric acid. Daily colon irrigations were given, at first of sodium bicarbonate and later of saline solution. The return was usually clear except for the occasional presence of mucus in small amounts. He was allowed to return to his home after two weeks, but although the diarrhea had stopped the stools continued loose and unformed.

In September, 1929, he reported that his condition seemed satisfactory and that he had been well except for occasional upsets associated with return of the diarrhea following omission of hydrochloric acid.

In November, 1929, however, the diarrhea returned acutely and persisted. The stools were watery and foamy, with considerable amounts of mucus but no blood. Physical examination at this time showed definite atrophy of the papillae of the tongue but no aphthae. There was tenderness high up in the rectum on digital examination but otherwise there were no new manifestations. The hemoglobin was 99 per cent, the red cell count 4,180,000, and the white blood count 8,200 with 73 per cent polymorphonuclears. The stained smear showed anisocytosis, poikilocytosis, and occasional polychromatophilic macrocytes. There was no subjective or objective evidence of subacute combined sclerosis. Because of the primary anemia, the frothy diarrhea, and the absence of signs of involvement of the spinal cord, he was admitted to the Presbyterian Hospital for treatment of sprue. A second gastric analysis following the administration of histamine showed free hydrochloric acid absent and total acidity none. Reexamination of the colon by x-rays presented essentially the same picture as on the

20. van Nitsen, R.: Traitement de la dysentérie bacillaire par vaccinothérapie, Bull. méd. du Katanga **1**: 252 (Dec.) 1924.
21. Smyly, H. J.: Bacillary Dysentery, in Cecil, R. L.: Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1928, pp. 159-166.
22. Rogers, L.: Sensitized Shiga and Flexner Vaccines in the Treatment of Chronic Bacillary Dysentery, Brit. M. J. **1**: 7-8 (Jan. 1) 1916.
23. Lichtenstein, A.: Chronic Bacillary Dysentery, Medec. Burgelyk, Geneesk. Dienst in Nederl.-Indie, 1922, pp. 268-269.
24. Silverman and Feemster (footnote 5). Douglas, Colebrook and Morgan (footnote 6). Bastedo (footnote 13). Castellani (footnote 15). Maggi (footnote 17). Rogers (footnote 22).

former occasion. Stool examinations were consistently negative for amebas and other parasites. At sigmoidoscopy the upper part of the rectum contained some mucopurulent exudate; the mucosa was markedly hyperemic and showed numerous ulcers, the largest 0.5 cm. in diameter. The patient was placed on the diet then in use for the treatment of sprue: the quantitative elimination of wheat, rice, sugar and potatoes with the substitution of banana flour for the carbohydrates. During the period of observation the temperature was normal and he was discharged to continue the diet, liver extract and hydrochloric acid at home.

These measures did not alter the character or the intensity of the diarrhea, and a month later he was readmitted because of the increasing severity of this symptom and the development of tenesmus with the passage of large amounts of pus and mucus. A second sigmoidoscopic examination showed multiple superficial ulcerations with slightly hemorrhagic borders, covered with a foamy yellowish-white cap. They were most numerous in the lower part of the rectum. The mucous membrane between the ulcers was not hyperemic, and there was no evidence of undermining of the edges. Smears taken through the sigmoidoscope failed to reveal amebas, but cultures similarly made grew out a practically pure culture of Flexner-Y bacilli.

An autogenous vaccine was made at once and given in increasing doses three times a week until the patient was receiving a billion bacilli at each injection. This was continued for several months. There was an immediate improvement in all the bowel symptoms, and within two weeks of the initiation of this treatment the diarrhea ceased and the stools became normal.

In November, 1930, he returned, complaining of constipation and the occasional appearance of a slight mucopurulent discharge from the rectum when this symptom was especially marked. A stool culture for the Flexner bacilli was negative, but another course of six injections of the autogenous vaccine was given.

He was seen again in November, 1931. There had been no recurrence of diarrhea since the initial vaccine treatment twenty-two months previously. The rectal discharge had not returned, the bowel function was normal, and the stools were free from any abnormality. Reexamination of the colon by x-rays showed a smooth outline of the sigmoid with approximately normal haustrations proximal to it. No indication of irritability was noted. Sigmoidoscopic examination revealed a normal appearing mucous membrane; ulceration and hyperemia were not present. Cultures taken through the sigmoidoscope from the mucosa of the sigmoid region and the rectum were negative for B. dysenteriae. The hemoglobin was 98 per cent, the red cell count was 4,360,000, and examination of the stained smear showed a few macrocytes and microcytes and a moderate degree of anisocytosis. The average cell diameter, as measured by the Eve halometer, was 7.8 microns.

COMMENT

This case is presented because of the rapid and complete response to treatment by an autogenous Flexner-Y vaccine, and because of the cure proved by symptoms, sigmoidoscopy and cultures twenty-two months after the beginning of specific treatment. It illustrates some of the difficulties that may occur in the identification of an etiologic factor in a case of chronic ulcerative colitis. Stool cultures were negative, yet subsequently B. dysenteriae was recovered on direct culture from the floor of the ulcer through the sigmoidoscope. The history given by the patient again points to the important rôle a mild attack of bacillary dysentery may play in the individual's later health. Despite the apparent continuity of intestinal symptoms during the years from the initial attack in 1923 to the time the diagnosis was established in 1930, the patient attached little importance to them and considered merely that he had an easily disturbed gastro-intestinal tract. The facts that have been presented in this connection were not obtained as part of a connected story but for the most part as the result of direct and leading questioning.

At the time the bowel symptoms became prominent, the patient was found to have an achlorhydria and a primary anemia associated with the diarrhea. The latter symptom was attributed to the primary anemia and was expected to yield to the treatment of this condition. When it continued in spite of hydrochloric acid and liver extract in adequate and continued dosage, and when the stools presented the appearance so characteristic of sprue, together with the lack of evidence of subacute combined sclerosis, the diagnosis of sprue was seriously entertained.

Strauss [25] and Schroeder [26] have shown that altered functions of the gastric mucosa and of the hematopoietic system may occur in association with chronic dysentery. These cases have been classified in three clinical groups.[27] Of the chronic carriers, 60 per cent showed hypochlorhydria, some abnormality of the stools, and a reduction of hemoglobin values. Others showed hypo-acidity, a definite chronic colitis sometimes with ulceration, and changes in the blood picture. The third group presented a frank recurrent dysentery and colitis, intestinal ulceration, and cachexia. In 1912, Castellani [15] reported three cases of chronic Flexner dysentery in which there was an associated clinical picture indistinguishable from sprue although occurring in a locality in which sprue was not considered endemic. Recently a detailed study of the anemias associated with chronic dysentery has been made at Peiping.[28] In the group as a whole, all the features said to be characteristic of pernicious anemia have been observed. The conclusion is reached that the cause of the anemia is not always the same, but the most important factors in its development seem to be the nutritional disturbances resulting from a faulty diet and a process that interferes with normal nutrition. Gastric anacidity, loss of blood, and infection are considered to be important contributory factors. In the case here reported it has not been possible to demonstrate a dietary deficiency, although the primary anemia seemed to develop during the period of observation. The other factors of anacidity and infection were both present. Elimination of the infection, however, has not altered the condition of the blood.

SUMMARY

1. The Flexner-Y group of dysentery bacilli may cause sporadic cases of mild diarrhea and dysentery. The occurrence of these cases does not require the presence of epidemic conditions.

2. A significant number of these individuals may become persistent carriers and develop ulcerative lesions of the lower part of the bowel, even though the initial acute attack may have been very mild.

3. The lesions of chronic bacillary dysentery differ in no respect from those encountered in many of the cases of so-called chronic ulcerative colitis.

4. Intermittence of the excretion of the bacilli is one of the characteristics of chronic Flexner bacillus infection, and repeated cultures over a period of weeks may be necessary to demonstrate them.

25. Strauss, H.: Zur Behandlung von Folgezustanden der Ruhr, Therap. d. Gegenw. **58**: 409-414 (Dec.) 1917.
26. Schroeder, A.: Ueber Folgezustande der Ruhr, Deutsche med. Wchnschr. **43**: 1162-1164 (Sept. 13) 1917.
27. Walko, K.: Ueber der Spatfolgen der Ruhr, Med. klinik **19**: 1319 (Oct. 7) 1923.
28. Keefer, C. S.; Yang, C. S., and Huang, K. K.: Anemia Associated with Chronic Dysentery, Arch. Int. Med. **47**: 436-466 (March) 1931.

5. Cultures taken direct from the floor of the ulcers through the sigmoidoscope materially increase the probability of recovering the organisms.

6. Autogenous vaccine in adequate dosage sufficiently prolonged is an efficient therapeutic procedure.

16 East Ninetieth Street.

BACILLURIA UNDER KETOGENIC TREATMENT

ANSON L. CLARK, M.D.
ROCHESTER, MINN.

In a discussion on the persistence with which attempts to dislodge the colon bacillus from the urinary tract are defeated, Barborka reminded me that the urine of patients who are receiving a diet high in fat and low in carbohydrate is considerably acidified. Shohl and Janney,[1] a number of years ago, demonstrated that growth of colon bacilli was inhibited in urine of which the acidity was as great as p_H 4.6 or 5.0, or alkalinity as much as p_H 9.2 or 9.6.

In October, I [2] reported the results in two cases of bacilluria of Escherichia coli type, in which the ketogenic diet was given. Since that time, the treatment has been applied in several additional cases of persistent bacilluria, and the patients have been under observation long enough to allow the results to be evaluated.

In the accompanying table is a summary. Several notable features emerged from observation of these cases:

1. The general condition of the patient must be such that he can endure the alteration in his diet. A patient who is able to take a moderate amount of exercise is a far more satisfactory subject for this type of treatment than one who is necessarily confined to bed.

2. Cooperation of the patient is absolutely necessary. In cases 2 and 6 in the table the patients were not cooperative, and the results obtained, as judged by the p_H of the urine, were correspondingly disappointing.

3. The patient must be able to digest and assimilate fats. This was clearly demonstrated in case 15; the patient apparently was unable to prepare the ingested fats for assimilation. He had undergone resection of the stomach, but whether this fact is relevant to his inability to rid himself of bacilluria cannot be stated.

4. The normal intake of fluid should be maintained. Increase in the intake of fluids may cause undesirable dilution of ketogenic products.

5. If the infection is in the upper part of the urinary tract, treatment must be continued for a longer time than if the infection is in the bladder.

6. The ketogenic diet tends to entail constipation and gastro-intestinal upsets, but a dietitian can forestall these effects.

7. Escherichia coli responds to this type of treatment more readily than organisms of the genus Pseudomonas or than Aerobacter aerogenes. These organisms apparently continue to grow at an acidity which entirely inhibits the growth of Escherichia coli. However, in cases in which the organisms present were gram-negative bacilli other than Escherichia coli, with the exception of case 15, the symptoms were greatly improved, the haziness of the urine disappeared, and only on culture of the urine was it possible to find organisms.

8. When patients are given the ketogenic diet, the appearance of acetone bodies in the urine and increase in the acidity of the urine would be expected. Nevertheless, in some cases such bodies are not found and acidity is not increased. Case 15 is in point. The patient was given the ketogenic diet without success and then was given large doses of ammonium nitrate and ammonium chloride, which also would tend to lower the p_H of the urine. However, the reduction in p_H actually accomplished was only 0.3.

9. The effect of the ketogenic regimen does not seem to be solely the result of reduction of the p_H of the

Treatment of Cases

Case (All Male)	Age	Duration of Illness Before Ketogenic Treatment	Initial Condition of Upper Part of Urinary Tract	Organisms in Culture of Urine	Days of Diet Until No Growth on Culture	p_H of Urine at Start of Ketogenic Treatment	Lowest p_H of Urine (Under Treatment)	Culture of Urine, Last Examination*
1	35	3 years	Not known	Escherichia coli and Aerobacter aerogenes	11	6.8	5.0	No growth
2	56	2 months	Negative	Escherichia coli	7	6.9	5.7	No growth
3	54	18 months	Pyelonephritis	Escherichia coli	12	6.3	4.6	No growth
4	60	6 years	Bilateral pyelonephritis	Genus Pseudomonas	18†	6.8	4.4	Pseudomonas
5	65	2 months	Negative	Aerobacter aerogenes	14†	6.8	5.3	No symptoms; few Aerobacter aerogenes organisms; urine clear
6	66	3 years	Negative	Aerobacter aerogenes	11†	6.8	5.7	Few symptoms; bacilli present; glass 1 clear, with shreds; glass 2, clear
7	63	7 months	Negative	Escherichia coli	8	7.0	5.0	No growth
8	28	1 year	Pyelitis	Escherichia coli	16	6.5	5.3	No growth
9	56	18 months	Negative	Escherichia coli	8	6.6	5.2	No growth
10	40	2 years	Bilateral pyelitis	Escherichia coli	8	7.1	5.0	No growth
11	59	3 years	Pyelitis	Escherichia coli	9	5.7	5.0	No growth
12	52	3 weeks	Negative	Escherichia coli	22	6.7	5.0	No growth
13	28	3 weeks	Negative	Escherichia coli	35	7.1	5.3	No growth
14	63	5 months	Bilateral pyelonephritis	Escherichia coli; Proteus ammoniae	27	7.0	5.3	No growth
15	50	18 months	Pyelitis	Aerobacter aerogenes	6‡	6.7	6.5	Aerobacter aerogenes

* In cases 5 and 6, for reasons obvious in the other footnotes, features other than the results of urinary culture are listed.
† On the days indicated, organisms still grew on culture but the patients could not remain for further treatment.
‡ Patient's condition unsuitable for further treatment, as explained in the text.

From the Section on Urology, the Mayo Clinic.

1. Shohl, A. T., and Janney, J. H.: The Growth of Bacillus Coli in Urine at Varying Hydrogen Ion Concentrations, J. Urol. **1**: 211-229 (April) 1917.

2. Clark, A. L.: Escherichia Coli Bacilluria Under Ketogenic Treatment, Proc. Staff Meet., Mayo Clin. **6**: 605-608 (Oct. 14) 1931.

urine. There is apparently some bactericidal substance in the urine of patients who are under the ketogenic treatment, for growth of the bacilli may be inhibited even though the p_H of the urine is more than 4.6 or 5.0.

SUICIDE

POSSIBILITIES OF PREVENTION BY EARLY RECOGNITION OF SOME DANGER SIGNALS

RUTH E. FAIRBANK, M.D.
Associate in Psychiatry, Johns Hopkins Hospital
BALTIMORE

The cunning of the suicidal impulse is so baffling and the result such a deplorable frustration of medical effort that the dangers cannot be too often emphasized nor the importance of a continued search for a better understanding of the underlying factors overstressed. At the suggestion of Dr. Adolf Meyer, a careful study of 100 cases of suicidal attempts was made for the medical and nursing staff of the Henry Phipps Psychiatric Clinic, of which some of the deductions may be of wider interest.

Historically, it has been found that the attitude of the individual and of the public toward suicide has undergone many changes throughout the past centuries. Among the Greeks and Romans [1] it was an outgrowth of individualism and was not associated with shame but was rather considered a matter of honor, a custom present today in Japan, where hara-kiri, or honorable suicide, still exists. During the middle ages suicide became infrequent, but with the reformation and the recognition of individual freedom it increased. The reaction to this exacerbation brought about efforts at control by refusal of funeral rites or by legal punishment of the unsuccessful. Many of these laws have been repealed in this country,[2] and attempts at self-destruction are treated with some commiseration. What is more important, a study of the cases and more interest in help and prevention by attempts to understand and to determine better ways of dealing with the individual and with the group attitude has slowly been developing among the medical profession.

A large amount of literature has gradually accumulated on the question of suicide, written more from the standpoint of sociology,[3] pathology [4] and psychoanalysis,[5] with relatively few articles of practical help concerning the prevention.[6] The intentional termination of life is by no means always due to mental disorder;[7] if one considers the patients seen in an accident dispensary,[8] one has the general impression that a number of attempts come as impulsive or ruminative despair and spite reactions and are not the result of a mental illness so much as a maladaptation to the situations of life, reacted to in a rather childish, impulsive way.

The present study of forty-seven women and fifty-three men is principally concerned with attempts in which the physician, the nurses and the friends of the "suicide" have reason to feel that with better knowledge and greater care and attention it might have been possible to prevent what is usually a serious trauma to the unsuccessful and a deplorable event to everybody. While practical help may perhaps be obtained from the unheeded warnings and from the failures in judgment that seem to stare one in the face in retrospect, a brief analysis will first be presented of the facts given by the case histories concerning the types of mental reactions in which this urge occurs, the apparent motives, what the patients talked about, the personality, the heredity and the variety of suicidal methods of which one should be aware.

MENTAL REACTIONS

As reported over a period of many years by various writers, suicide has occurred in almost every type of mental illness, but it is most frequently associated with depression.[9] In 100 cases studied, 73 presented outspoken depressions and 17 of the 24 paranoid and schizophrenic cases showed at least depressive waves; there were, moreover, 5 patients with psychopathic personalities, 2 cases of dementia paralytica and 1 case each of epilepsy, chronic invalidism and recurrent manic excitement. The depressions included agitated, hypochondriacal, paranoid, unreality, obsessive and manic-depressive types.

MOTIVES

In a study of 500 cases by Mühl,[10] there was always a feeling of failure or frustration. In analyzing the life situations of our group, this is often apparent: it may be a failure at self-control, or grieving over a loss, or any of the variety of frustrated ambitions which one finds in the study of a personality. While certain writers give incest, onanism, wishing for the death of another individual and escape in order to return to the prenatal state as analytic interpretations, these motives have not been apparent in our material. We see rather the wish to escape from mental suffering, from fears or difficult family situations and disappointments, and whether this can be interpreted as the freudian death-wish depends on the trend of one's analytic interest. "Hopelessness" and "despair" were spoken of in about half of the case histories in which motives were stated. It is interesting to note the relative frequency of the statement of a fear or sometimes the conviction that a patient has of "losing his mind" or "going crazy." This topic of a fear of insanity was found to occur more frequently in depression, but it also occurred in the schizophrenic, the constitutional psychopathic and the paranoid reactions. The fear of insanity seemed in a few cases to be related to a fear of the inheritance of

---

Read before the American College of Physicians, Baltimore, March 27, 1931.

1. Rost, Hans: Bibliographie des Selbstmords, Augsburg, Haas & Grabherr, 1927.

2. Hoffman, F. L.: Suicide Problems, Spectator, 1893-1928. East, W. N.: Suicide from the Medicolegal Aspect, Brit. M. J. **2**: 241 (Aug. 8) 1931.

3. Morselli, H.: Der Selbstmord: Ein Kapital aus der Moralstatistik autorisierte Ausgabe von Scheel, Leipzig, F. A. Brockhaus, 1881. Durkheim, E.: Le suicide; étude de sociologie 2, Paris, Félix Alcan, 1912. Miner, J. R.: Suicide and Its Relation to Climatic and Other Factors, Am. J. Hyg., Monographic Series 2, 1922. Weichbrodt, R.: Der Selbstmord, Berlin, S. Karger, 1923. Halbwachs, M.: Les causes du suicide, Paris, Librarie Félix Alcan, 1930. Bond, Hubert: Suicide from the Sociological Aspect, Brit. M. J. **2**: 234 (Aug. 8) 1931.

4. Pfeiffer, H.: Ueber den Selbstmord, ed. 5, Jena, Gustav Fischer, 1912.

5. Clark, L. P.: A Study of the Unconscious Motivations in Suicide, New York M. J. **116**: 254 (Sept. 6) 1922. Roalfe, W. R.: The Psychology of Suicide, J. Abnorm. Psychol. **23**: 59 (April-June) 1928. Crichton-Miller, H.: The Psychology of Suicide, Brit. M. J. **2**: 239 (Aug. 8) 1931.

6. Benham, H. A.: Some Remarks on Suicides in Public Asylums, J. Ment. Sc. **49**: 447 (July) 1903. Dewey, R.: On the Care of Suicidal Patients and the Responsibility Involved, Wisconsin M. J. **7**: 475 (Jan.) 1909. Placzek: Nervenartz in Berlin: Selbstmordverdacht und Selbstmordverhütung, Leipzig, Georg Thieme, 1915. Salmon, T. W.: A Psychiatric Study of Suicide, J. Nerv. & Ment. Dis. **55**: 105 (Feb.) 1922. Serin, S.: Une enquête medico-sociale sur le suicide à Paris, Ann. méd. psychol. **12**: 356, 1926.

7. Falret, P.: De l'hypochondrie et du suicide, Paris, Crouillebois, 1822. Esquirol, J.: Sur la monomanie suicide, Paris, Baillière, 1827. Lowrey, L. G.: An Analysis of Suicidal Attempts, J. Nerv. & Ment. Dis. **52**: 475 (Dec.) 1920.

8. For example, the young woman who runs for help immediately after she has impulsively swallowed a mercuric chloride tablet when her "boy friend" loses interest in her, or the wife who picks up a bottle of iodine and starts to drink it when her husband comes home intoxicated.

9. Meyer, A.: Thymergastic Reactions, unpublished manuscript.

10. Mühl, A. M.: America's Greatest Suicide Problem, Psychoanalyt. Rev. **14**: 317 (July) 1927.

mental illness and only infrequently was it associated with conflict over masturbation. In the depressions it no doubt is associated with the difficulty in thinking, which is a frequent complaint in this reaction and taken by the patient as a sign of deterioration and degeneracy. Spite seemed to be a possible motive in a few cases. Other patients apparently chose death as an escape from delusional persecutions such as a fear of being castrated or of being poisoned, killed or tortured. Two patients commited suicide to avoid actual situations which they found it difficult to face, while another, who almost succeeded in decapitating herself, gave as her reason for the desperate attempt the feeling she had of emptiness and inability to discuss her problems with us, a procedure she thought we would insist on, and the conviction that this was evidence of a fundamental lack in her. One man who is still miraculously alive tried for months to mutilate himself because he felt that the physicians wanted him to atone for feelings of guilt over infidelity, and in a later depression he tried to kill himself by jumping from a moving train "for the sake of his family," showing the false sacrificial basis of some suicidal motives.

The main value in a discussion of the actual content lies in the hope that such phrases as "I am an empty shell," "I'm guilty," "I am afraid of going crazy," "there is no hope for me" and "it's no use going on" may become danger signals and give warning that special watchfulness is indicated.

PERSONALITY

The only outstanding characteristic in common found in a study of the personality traits in this group is the so-called "rigid"[11] or "stubborn" personality, which was noted in about one third of the cases. Probably rigidity or the lack of plasticity in the make-up could be considered as one of the factors of determination, apart from mere impulsive panic, which influence a patient to suicide.

HEREDITY

A family history of suicide was found in only a few cases, but a history of depression, of psychotic relatives or of alcoholism was more frequent. Whether the tendency to self-destruction is inherited or not, the knowledge of suicides in the family undoubtedly has a suggestive influence.

METHODS

The methods of self-destruction are of interest as to group habits, to personal tendencies and to preoccupations, and they give information regarding the variety of things from which it is necessary to protect the potential suicide. This varies with the opportunities at hand in the hospital and the somewhat wider possibilities on the outside. Regarding protection, a restriction of the sale of firearms and of poisons such as mercuric chloride, carbolic acid, iodine and potassium cyanide, as well as such sedatives as veronal (barbital), which can be obtained without prescription in Maryland, might help to reduce the number of suicides somewhat where law observance can be generally expected; but there are always other possibilities such as hanging, drowning, inhaling gas, jumping from heights, impulsively plunging down stairs or against a wall, jumping from a moving train, cutting the throat or wrists with a razor blade or a piece of broken glass and jabbing a sharp instrument into the heart. The type of method chosen is also determined by the prevailing social custom or "style," as indicated in the frequent newspaper reports of gunshot wounds and gas poisoning at present, or the cup of hemlock in ancient times. We did not find any specific relation between the type of mental reaction and the method chosen, although in the schizophrenic and paranoid cases the more bizarre means were apt to be chosen.

WARNINGS

The topic of warnings may perhaps raise the hope that here is something on which dependence may be placed as a help in the prevention of suicide. It will take a further study of control groups to make any "warning" in any way specific of this danger. However, our records show that more than one third of the patients gave a very definite indication of danger by having made a previous attempt at self-destruction. An individual who has once taken this step seems rather more determined to "get away with it," and one finds such statements as "I'll make a better job of it next time." Besides these cases, approximately another third suggested their intentions by talking about it. It has sometimes been said that one need not fear suicide if a patient talks of it, as he "takes it out in talking," but this has not been our experience. This does not mean that in every case record one finds repeated expressions of wanting to die, of threatening suicide or of asking and looking for means with which to do it, for in some records one finds only isolated statements of this sort in the nurses' notes. In many cases, on the other hand, practically the entire talk and activity seem to be concerned with suicidal thoughts or threats. There were fourteen patients who gave no indication of their preoccupation or intention other than the fact that they were depressed or very tense. In contrast to these were six cases in which the suicidal impulse came out of a clear sky, and there were four cases in which we learned only after the disaster that something could have been done had the relatives or friends been more prompt in confiding to us their suspicions. Other symptoms that might be considered as possible danger signs because they immediately preceded the suicidal impulse are such behavior as pacing the floor when the patient has shown no previous agitation, attempting to pull away from nurses or attendants while being accompanied to another part of the building, or an overeagerness to join in some activity outside the ward in an agitated patient who has shown no previous interest. Also the period of convalescence is precarious, as the improvement in symptoms may bring a false optimism and relatively often an unanticipated suicidal attempt.

It is instructive to note that one sometimes finds that patients more or less consciously make an effort to protect themselves against their own morbid impulses. For instance, one of the patients, while in a general hospital, asked the nurse to hide his razor as he "couldn't see it without wanting to cut his throat," which he actually succeeded in doing later when he saw a knife in the office of a physician whom he consulted. Another patient, obsessed with the idea of suicide, refused to go to the carpenter shop "because he couldn't trust himself with anything sharp." Another came to the clinic begging to be taken in because he was afraid he would kill himself. The fact that so many of our patients talked of suicide suggests a half-conscious reaching out for protection.

On the other hand, we often deal with the sly, secretive patient who hides pieces of glass or conceals razor blades in his clothing. Recently a patient was found to have a revolver with him which he said he always

11. Muncie, Wendell: The Rigid Personality as a Factor in Psychoses, Arch. Neurol. & Psychiat. **26**: 359 (Aug.) 1931.

carried to protect himself when driving in the country, but he later confessed that he had bought it with the intention of killing himself if we did not find anything wrong with him and did not take him into the clinic, which we fortunately did. A patient entered the hospital with veronal sewed in the lining of her coat which was not discovered until after she had taken enough to produce a stupor for several hours; she later killed herself elsewhere by thrusting scissors into her heart while the nurse prepared her bath. Another woman concealed veronal in the lining of her hat; other patients have procured razors, veronal or revolvers while out on parole and secreted them in their clothes. The duty of searching diligently for such objects is not a pleasant one, but it is very necessary with suicidal patients.

SPECIAL PROBLEMS

This brings us to the topic which is perhaps the most difficult but the most instructive if we are to profit by experience, that of the consideration of medical and nursing responsibility and the situations in which judgment plays a rôle. We perhaps need not be as concerned over the patients who were discharged to other hospitals or taken home against our urgent advice, as with the patients who were apparently discharged with our consent, several of whom killed themselves within a period ranging from a few days to five months after leaving the hospital. This is suggestive of a premature discharge rather than of a recurrence of symptoms. No doubt many patients have been allowed to leave the hospital with some misgivings on our part who have made an uneventful recovery, and others have been taken against our advice and have done equally well, but it is important to emphasize the need of a recorded discussion of the risks involved with some responsible member of the family in every discharged case in which suicide has been a problem or even a possibility.

One of the questions that frequently come up for discussion in the hospital is whether or not a patient should be placed on "suicidal observation" and when such orders can safely be discontinued. This order may be either not given in time or prematurely canceled in order to spare the feelings of the patient or to give more encouragement by permitting greater freedom. Guarding against suicide should be such an inherent part of the atmosphere that it should be unnecessary to make special orders for it; nevertheless it seems almost impossible to have a ward free from such potentialities without making the patients in general suffer from a deprivation of interests. Hence there is a need of special technical "suicidal observation," even if it has disadvantages. That this order may have a suggestive influence is also true. Many patients have complained that they had never thought of the various possibilities until their attention was called to doors being locked, windows being guarded, bureau scarfs being removed, nail files and hair pins and scissors being collected; other patients who are somewhat paranoid misinterpret the constant watching. Nevertheless, experience shows that almost all suicidal attempts occur when the patient is left alone, and we should be able to offer protection by obviating this situation. Orders that doors should be allowed to be closed on the latch or for patients who have been depressed to be given parole should be matters of concern, as is the order for an agitated patient to be given permission to be taken for special therapy to other parts of the building. However, the desire to help the patient sleep who is oversensitive to noises, and the effort to encourage the individual apparently recovering from depression to try himself out, or to keep the agitated patient from chafing unnecessarily against restrictions are all understandable exceptions to the usual routine of suicidal protection and not without therapeutic justification. Experience would nevertheless warn us not to take these risks unless there is good rapport with the patient or an understanding with the family regarding the sharing of responsibility.

This question of responsibility in cases of suicide becomes at times an unwelcome burden, when legal advantage is sought by survivors of the unhappy patient. To allow the idea to prevail that hospitals, nurses or physicians should be liable for damage, unless neglect is obvious, may do a great deal of harm. Responsibility is hardly ever absolute or one-sided. The cunning and persistence of some of the attempts would baffle almost any measure one might think of. There must be a definite latitude for judgment and not every lapse should be judged indiscriminately. The scope of therapeutic activity prescribed in these cases must depend to a large extent on the rapport with the patient and the willingness of the family to share the responsibility when risks are involved. Measures of protection, however relative, will nevertheless be all the more important.

The following cases are given in brief summary to illustrate some of the special hazards and the somewhat unusual means of succeeding, which are not easily anticipated.

Case 1 shows the power of suggestion and the harmful influence newspaper reports of suicide can have, as well as the danger of having firearms available at home:

CASE 1.—A married man, aged 27, came to the general hospital because of hypochondriacal fears of some months' duration and of more recent depression and "lack of concentration" after hearing of the suicide of a friend who had cut his throat with a razor. He worried over thoughts of taking his own life and, when left alone by his nurse, impulsively dived out of the second story window, causing a hemothorax which gradually cleared up. He was transferred to the Phipps Psychiatric Clinic immediately following this impulsive attempt. During the next few months he expressed many vague worries and fears: "I'll be punished for what I have done" (showing guilt over masturbation), or "I think my mind must be affected" (the fear of insanity). With these fears he also had waves of depression but was beginning to show an interest in activities again when he read in the newspaper that a patient who had been discharged home shortly before and with whom he had talked a good deal about farming had shot himself. This came on top of a little flurry of discouragement over having heard an orderly talk of taking a patient to the city hospital "as he was incurable." After reading of the suicide, the patient could not seem to throw off the fear that he would kill himself. He spoke of "not being willing to trust himself with a gun" and did not go to a carpenter shop lest he "cut his throat"—an effort to protect himself. He was obviously filled with a fear of suicide that amounted almost to fascination. He brooded over his symptoms and said "my mind is not functioning," "I'm hopeless of ever getting it right," and spoke of the family history of insanity. The patient was allowed to go to the pool room one evening and managed to avoid the nurses and escape and get home without attracting immediate attention and had shot himself before the physicians who followed him home could reach him. Naturally, this patient was unusually suggestible, but had the incident of the newspaper notice occurred when he was not in a depressed wave, he might not have acted on the suggestion.

Case 2 illustrates the dangers of stairs and walls. This case is also chosen to show that a depressed patient who develops delusions of persecution can be very desperately driven to suicide.

CASE 2.—A single man, aged 49, complained of worry over past sex affairs and responded to efforts to discuss this topic with him by a fear that what he had said would be used against him. He regretted having told so much of his personal affairs, became suspicious that the patients were at the clinic to get data on him and that the government had set traps for him and would punish him. The next step was a belief that his food had been "doped" in order to make him talk and that a dictaphone had been used to record what he had said. He was recognized as suicidal and the extra watching required by suicidal observation only made him suspicious that he was being watched to detect masturbation, and he then developed a fear that he would be castrated. He said that he was "crazy" and that there was "no hope" for him now, and he felt he had in some way disgraced the whole institution. It was impossible to reassure him.

In a state of such widespread misinterpretation it would no doubt have been wiser to restrict the patient's activities to the ward, but in an effort to stimulate his interest in work he was taken to the occupation rooms and while there talked constantly to himself, which showed his preoccupation. On the way back to the ward he broke away from the nurse and attendant who were accompanying him and plunged head first down the marble stairs, fracturing his neck.

One cannot easily hope to prevent a strong patient from suddenly pulling away from those accompanying him. While in such a panic, occupation should be brought to the ward and the risk of impulsiveness thereby somewhat reduced. Unfortunately, even within the ward one patient has been successful in breaking his neck by butting his head against the wall.

The dangers of the transportation of a depressed patient need to be emphasized. Case 3 is presented to show the type of precaution needed in cooperation with the railroads:

CASE 3.—A single woman, aged 57, who became suicidal and self-accusatory following the death of her mother and the breaking up of her home, was on the train being transferred from the clinic to another institution when she managed to escape from her nurse and a relative long enough to lock herself in the toilet room, and she was able to get the window up and jump from the moving train before the porter could be reached and the door opened.

Another patient, mentioned previously in the discussion of "motives," got out of the window of his berth while left alone a minute, but escaped death almost miraculously, sustaining only a few bruises.

This gives a few of the situations of which one needs to be aware in caring for the potential suicide.

SUMMARY

The only possible cure of suicide is prevention. What are some of the guide-posts one can use?

1. Most suicides occur in patients who are depressed, but suicide is also relatively frequent in schizophrenic and paranoid patients, especially those whose conversation reveals depression.

2. Disappointment over some situation which seems unmodifiable to the rigid individual is perhaps the most common motive in suicide. A common feature in our cases is the talk of hopelessness, of wanting to die, of a fear of "going crazy"; such expressions as "a feeling of emptiness," of "guilt," or the special preoccupation with various delusions of persecution and with autistic fantasy.

3. The "rigid personality" is present in about one third of the cases and shows the need of careful watching.

4. A family history of suicide is apt to reduce the resistance.

5. Methods show the things from which patients need to be protected. In the hospital the impulsive plungers are especially difficult to take care of. On the outside, suicides from gas, gun-shot wounds and drowning are frequent.

6. Warnings are to be found in previous attempts and the frequent talk of suicide. Some patients, however, give no warning; others apparently try to protect themselves, while a third group conceal the means of suicide.

7. Special problems involve such questions as when to put a patient on suicidal observation and when to take him off, and how much risk to take in order to encourage an interest in occupation or to avoid unnecessary chafing against restrictions. The methods to be adopted must in the end rest with the personnel in charge, depending to a large extent on the rapport with the patient and the willingness of the family to share the responsibility which such a risk involves.

8. Finally, regarding prevention, I would suggest the restriction of the loose handling of firearms, poisons and sedatives, if possible, and would urge the cultivation of a sensitiveness to the aforementioned symptoms, warnings and mistakes. It is necessary to realize that a suicidal patient must never be left alone.

Johns Hopkins Hospital.

POLYCYTHEMIA VERA

REPORT OF CASE TREATED WITH PHENYLHYDRAZINE HYDROCHLORIDE OVER PERIOD OF SEVEN AND ONE-HALF YEARS

CLAIR L. STEALY, M.D.
SAN DIEGO, CALIF.

In April, 1928, I[1] reported a case of polycythemia vera which had been under observation and treatment with phenylhydrazine hydrochloride for three and one-half years and drew the following tentative conclusions from my experience with this case:

1. The erythrocyte count may be kept near normal limits by the periodic administration of 2.1 Gm. of phenylhydrazine hydrochloride divided into daily doses of 0.1 Gm. each. The drug may then be safely discontinued for intervals of one and one-half months.

2. No apparent tolerance to the drug was acquired.

3. The increase in leukocytes may possibly be used as an index to the administration of the drug.

4. No apparent deleterious effect on the liver was observed.

Treatment of this patient for the first six months consisted of the removal of three infected teeth, the administration of splenic extract and benzene by mouth, and roentgen therapy to the long bones. Under this treatment the patient noted some subjective improvement and there was some diminution in the size of the spleen, but there was very little change in the red blood cell count. Medication was then changed to phenylhydrazine hydrochloride by mouth and for the past seven and one half years the patient has been under constant observation and treatment with this drug. I feel that sufficient time has now elapsed to allow me to draw some more or less definite conclusions in regard to these four points under consideration and to suggest some possible explanations for the apparent discrepan-

From the Rees-Stealy Clinic.

1. Stealy, C. L.: Polycythemia Vera, J. A. M. A. **90**: 1287 (April 21) 1928.

cies brought out by other workers in the results obtained in the treatment of polycythemia with phenylhydrazine.

The observations of the physical examination at this time are not essentially different from those of seven and one-half years ago. The patient states that subjectively she is feeling very well and recently she has been doing rather heavy work connected with fitting up an apartment house. The skin is of a moderately dusky color and the mucous membranes are normal in color when the red cell count is down. The chest and heart manifestations are normal. The liver edge is slightly palpable on deep breathing and the spleen extends to the midline and almost to the crest of the ileum. The spleen is now smooth, however, and no tenderness can be elicited, whereas at the time of my first examination it had a sharp edge and notch and was exquisitely tender. Pelvic examination revealed a normal condition.

1. *Dosage.*—Based on the constant results observed in the treatment of this case, on my experience with two other cases and on the observations of others, especially Giffin [2] and Altnow and Carey,[3] it is my belief that the necessary dosage will vary with the individual case but that, once it has been established, the patient will respond consistently within normal variations to the same dosage. The dosage may vary with different individuals.

2. *Tolerance.*—My experience with this case [1] has disclosed no evidence to show that a patient will develop a tolerance to the drug and require a constantly increasing dosage. It would appear that the patient at times acquired a temporary tolerance to the drug, but in subsequent periods her reaction to the original dosage was the same as during the first periods of medication. This indicates, I believe, that some unknown factor may produce a temporary tolerance, and it may be that instances of increased tolerance to the drug reported in the literature [4] were obtained during such temporary periods of increased tolerance and that, had further observation of the case been possible, the previous reaction to the drug would have been obtained.

3. *Leukocytosis as an Index to Treatment.*—The rise in the leukocyte count precedes the fall of the red cell count in most periods of medication, and the rise of the white cell count varies in different periods of medication, but I do not feel that the white cell count can be used as an index to treatment. At the time of the highest rise of the white cell count, during the period from Nov. 20 to 28, 1930, its use as an indicator for the discontinuance of the drug would have been quite correct, for there was a decided drop in the red cell count. During the period of medication between June 13 and July 1, 1929, however, when the white cell count reached its second highest point, the red cell count varied but little. During this period, therefore, a discontinuance of the drug although seemingly indicated by the extreme leukocytosis was in reality not justified since there had been but little decrease in the red cell count. An explanation of this variability may be found in Allen's [5] experimental work. He reports that the phenylhydrazine seems at times to act directly on the hematopoietic system and at other times directly on the red blood cells—hemolysis; the increase in the white cell count may be due partly to the breaking down of the red cells and partly to the stimulation of the hematopoietic system. This variability leads me to conclude that the rise in the leukocyte count cannot be used as an indicator for the discontinuance of the drug.

4. *Development of Cirrhosis of the Liver.*—After seven and one-half years of treatment there is no physical evidence of a cirrhosis of the liver in the case under discussion. Nov. 18, 1930, six years after treatment with phenylhydrazine was started, the liver function test in which bromosulphalein was used showed no retention of the dye. It seems probable that any damage to the liver resulting from the use of the drug would have begun to make itself apparent over this period.

TABLE 1.—*Basal Metabolic Readings*

Date		Reading
6/10/29	Before starting phenylhydrazine.....	Plus 19
6/17/29	While taking phenylhydrazine.....	Plus 31
6/24/29	While taking phenylhydrazine.....	Plus 18
7/ 1/29	After stopping phenylhydrazine.....	Plus 25

The differential leukocyte counts have revealed a uniformly high neutrophil and low lymphocyte percentage. This is in accord with the observations of Altnow and Carey [3] and also of Allen and Giffin.[5]

That the basal metabolic rate is increased in polycythemia has already been noted, especially by Bliss [6] and by Minot and Buckman.[7] My readings varied from plus 19 to plus 31. A reading of plus 19 was obtained, June 10, 1929, before a period of medication was started; readings of plus 31 and plus 18 on June 17 and 24, respectively, while the drug was being administered, and plus 25 on July 1 after medication was discontinued. From these variations it would seem that, although the readings are above normal, such readings are a result of the disease and not an effect of the phenylhydrazine therapy.

The urea, nitrogen and creatinine determinations apparently do not vary from normal. It is also to be noted that there is no variation either at the height of destruction of red cells or during the rest periods.

TABLE 2.—*Blood Chemistry Determinations*

Date		Urea Nitrogen, Mg. per 100 Cc.	Creatinine, 100 Mg. per 100 Cc.
11/14/24	While taking phenylhydrazine..	14.5	2.04
12/27/27	While taking phenylhydrazine..	16.2	2.25
9/24/28	Not taking phenylhydrazine....	17.0	2.2
11/17/30	Not taking phenylhydrazine....	13.3	1.8

The carbon dioxide combining power is apparently within normal limits, and there is no variation either during treatment or during rest periods.

During the resting stage the icterus index reading is normal or slightly above normal, but during the period of treatment it increases markedly and the patient develops a clinical jaundice. The serum bilirubin during the resting periods is apparently slightly higher than normal, in my case 1.65 mg. per hundred cubic centimeters (normal, from 0.1 to 0.3 mg.) but during

2. Giffin, H. Z.: Treatment in a Case of Polycythemia Vera, M. Clin. North America **12**: 1497-1500 (May) 1929.
3. Altnow, H. O., and Carey, E. B.: Case of Polycythemia Vera Treated with Phenylhydrazine Hydrochloride with Special Reference to Changes in Blood Morphology, J. Lab. & Clin. Med. **12**: 597-606 (March) 1927.
4. Leopold, S. S.: Treatment of Polycythemia Vera with Phenylhydrazine, M. Clin. North America **10**: 229-239 (July) 1926.
5. Giffin, H. Z., and Allen, E. V.: Experiments with Phenylhydrazine: I. Studies on the Blood, Ann. Int. Med. **1**: 655-656 (March) 1928.
6. Bliss, T. L.: Basal Metabolism in Polycythemia Vera, Ann. Int. Med. **2**: 1155-1161 (May) 1929.
7. Minot, G. R., and Buckman, T. E.: Erythremia (Polycythemia Rubra Vera); Development of Anemia; Relation to Leukemia; Consideration of Basal Metabolism; Blood Formation and Destruction and Fragility of Red Cells, Am. J. M. Sc. **166**: 469-489 (Oct.) 1923.

the height of treatment the icterus index rose to 35 (normal, from 4 to 6) and the serum bilirubin to 4.5 mg. per hundred cubic centimeters. An immediate direct van den Bergh reaction was not obtained at any examination. In each instance the reaction was delayed, indicating a hemolytic jaundice.

Kidney tests have disclosed no apparent indication of kidney damage. The intravenous phenolsulphonphthalein test, Sept. 11, 1928, showed the appearance of 66 per cent of the dye in the first hour and 22 per cent in the second hour, a total of 88 per cent; June 22,

TABLE 3.—*Icterus Index Readings*

Date	Icterus Index, Mg. per 100 Cc. (Normal, 4-6)	Serum Bilirubin, Mg. per 100 Cc. (Normal, 0.1-0.3)	Reaction
11/20/30.....	12.5	1.65	Delayed direct reaction
11/21/30.....	15.3	....	Delayed direct reaction
11/22/30.....	19.0	....	Delayed direct reaction
11/24/30.....	20.6	....	Delayed direct reaction
11/25/30.....	25.0	2.9	Delayed direct reaction
11/26/30.....	25.0	....	Delayed direct reaction
11/28/30.....	33.0	4.5	Delayed direct reaction

1929, the test showed 77 per cent of the dye in the first hour and 16 per cent in the second, a total of 93 per cent; in November, 1930, 35 per cent of the dye appeared in the first thirty minutes, 20 per cent in the second thirty minutes and 7.5 per cent in the second hour, making a total of 62.4 per cent. This last reading is somewhat lower than the previous determinations but is still within normal limits.

My observation of this patient over a period of years has suggested to me that some of the discrepancies as to results of treatment with phenylhydrazine hydrochloride found in the literature may be explained by the fact that single determinations were made on patients observed for short periods. Observations in the same patient vary at different times and I believe that some unexplained physiologic condition of the patient at the time may account for the variation in reaction to the drug. It is my belief that, in all cases of polycythemia

TABLE 4.—*Phenolsulphonphthalein Kidney Function Test*

Date		1st Hour, Per Cent	2nd Hour, Per Cent	Total, Per Cent
9/11/28	Not taking phenylhydrazine..	66	22	88
6/26/29	While taking phenylhydrazine	77	16	93
11/10/30	While taking phenylhydrazine	55	7.5	62.5

vera treated with phenylhydrazine, the patient must be individualized and treated as indicated by his individual reaction to the therapy.

CONCLUSIONS

My experience with the use of phenylhydrazine hydrochloride in the treatment of a case of polycythemia vera over a period of seven and one-half years has seemed to me to show that:

1. Once the necessary dosage has been established for the individual patient, the patient will respond to that dosage consistently.
2. The patient does not acquire a tolerance to the drug necessitating increasing dosage.
3. The leukocyte count cannot be used as an index to treatment.
4. The drug does not produce any apparent deleterious effect on the liver or kidneys.

2001 Fourth Avenue.

HEMORRHAGE INTO THE STROMA OF BOTH OVARIES

A SEQUEL OF MITRAL STENOSIS

GEORGE J. RUKSTINAT, M.D.
CHICAGO

Hemorrhage into the ovarian stroma is an infrequent occurrence according to most authorities. Kaufmann[1] describes the lesion and states that the ovary may reach the size of a child's head and look like a blood-soaked sponge. Karsner[2] speaks of rupture of vessels in the margin of the corpus luteum producing diffuse hemorrhage throughout the ovary but adds that diffuse is much more unusual than focal hemorrhage. Aschoff[3] and Stengel and Fox[4] mention chronic heart disease and poisonings as etiologic factors in interstitial ovarian hemorrhage. "Hemorrhage into the ovary has been found at autopsy" constitutes the sole reference to this lesion in the discussion of ovarian hemorrhage in typhoid in one reference system.[5] Classifications of ovarian hemorrhage are numerous. That suggested by Novak[6] is theoretically sound and practical. His division into follicular hematomas which may be of either the graafian or the atretic follicle, corpus luteum and stromal hematomas represents a compromise between previous arrangements, some of which were simpler but not as specific, and others which were obviously too complex. He lists the causal agents in the various types of hemorrhage as local or general; includes under the former menstrual hyperemia and nonmenstrual factors as the active hyperemia of pelvic inflammations, the passive hyperemia caused by thrombosis, varix or torsion of the ovarian pedicle, and the vascular disturbances occasioned by primary or secondary neoplasms. Under the general causes are included blood dyscrasias, disorders of nutrition, hemophilia, infections such as typhoid, phosphorus poisoning, burns, and hyperemia of the abdominal organs.

This arrangement is adopted by Blair,[7] who adds, as a source of hemorrhage, endometrial ovarian implants as described by Sampson.[8] Forssner[9] was able to find evidence of ovarian pregnancy in two cases of ovarian hematoma and was of the opinion that serial section of all such hemorrhagic ovaries was necessary to rule out pregnancy. As a matter of fact, he was convinced of the existence of pregnancy even when there was no sign of its presence in serial sections. He emphasized that parts of ova may be shed with blood, become embedded in the clot and degenerate, or become infected, rendering identification difficult.

In the overwhelming majority of reported ovarian hemorrhages the bleeding is traceable to the follicular structures, including under this head the corpus luteum.

From the Norman Bridge Pathological Laboratory, University of Chicago, Rush Medical College.

1. Kaufmann, Edward: Lehrbuch der speciellen pathologische Anatomie, ed. 8, Berlin, W. DeGruyter & Co. **2**: 1210, 1922.
2. Karsner, H. T.: Human Pathology, a Textbook, Philadelphia, J. B. Lippincott Company, 1926.
3. Aschoff, L.: Pathologische Anatomie, ed. 7, Jena, Gustav Fischer **2**: 620, 1928.
4. Stengel, Alfred; and Fox, Herbert: A Textbook of Pathology, ed. 7, Philadelphia, W. B. Saunders Company, 1921.
5. McCrae, Thomas: Osler's Modern Medicine, New York, Lea & Febiger **1**: 133, 1925.
6. Novak, Emil: Hematomata of the Ovary, Including Corpus Luteum Cysts, Bull. Johns Hopkins Hosp. **28**: 349 (Nov.) 1917.
7. Blair, E. M.: Ovarian Hematomata, Surg., Gynec. & Obst. **37**: 379 (Sept.) 1923.
8. Sampson, J. A.: Am. J. Obst. & Gynec. **4**: 451 (Nov.) 1922.
9. Forssner, H.: Können Grosse Intraperitoneale Blutungen aus Graaf'schen Follikeln oder Corpus Luteum Bildungen ohne Verhandensein von Schwangerschaft entstehen? Arch. f. Gynäk. **105**: 74, 1916.

Novak [6] found that this prevailed in a study of eighty-five ovaries removed at operation. The hematomas were usually under 2 cm. in diameter, although he found one 6 cm. in diameter. In correlating the ovarian lesions with the stages of the menstrual cycle, he found follicular hemorrhages of the ovary and the perifollicular hyperemia which preceded them, occurring usually at or near the time of ovulation. Thus, such hemorrhages were seen between the seventh and sixteenth days of the cycle, while corpus luteum hemorrhages occurred later, from the sixteenth to the twenty-fifth day. Runge [10] was also impressed with the importance of menstrual cyclic changes in the 120 ovaries that he studied. He cut them in sections 5 mm. thick; he never found hemorrhages in the sclerotic small ovaries of women past the menopause, but in those of women in the childbearing period they were invariably present. There was no hemorrhage in fourteen ovaries from women past the menopause; hemorrhage emanating from follicular structures occurred 100 times and diffuse interstitial hemorrhage was noted 6 times. The sclerotic small ovaries had a poor vascular supply and no formation of follicles or corpora lutea. The localized hemorrhages were pinhead to almond sized, flat or irregular, and commonly surrounded by a small yellow band. At times the blood accumulations had a sickle form representing extravasation from the capillaries

Diagnosis in Women from Whom Ovaries Were Removed

Diagnosis	Number of Cases
Chronic pelvic inflammatory disease	62
Myoma of the uterus	20
Carcinoma of the uterus	14
Ovarian cysts	6
Pyovarium	5
Metropathia hemorrhagica	4
Tubal pregnancy	3
Genital tuberculosis	2
Torsion of cyst pedicle	1

of the torn theca interna, which bulged the granulosa but did not break through into the follicle cavity. At times the blood was seen outside the shredded theca externa in the stroma, an extrafollicular hematoma. The diagnoses in the women from whom these ovaries were removed are enlightening as shown in the accompanying table. Diffuse ovarian hemorrhage occurred in only the pyovaria and torsion of the cyst pedicle where it really is to be expected.

The occurrence of bleeding from a ruptured corpus luteum has also been traced to hyperemia induced by coitus.[11] Indulgence in such sports as rowing, tennis, and horseback riding may also lead to follicular rupture. It was also seen to follow straining at stool [12] and vomiting, as in an attack of appendicitis.[13] Hemorrhage from a corpus luteum with normal pregnancy is also recorded.[14]

Most observers seem to find no difficulty in locating the site of hemorrhage, but a few apparently have been unable to locate the source. So difficult did it appear to Cantoni [15] that he advocated special methods for preserving the blood in blocks and sections. Runge [10] encountered twenty-two ovarian hemorrhages in 1,000 laparotomies and was unable to classify twelve of them. Schumann [16] also admits inability to establish the origin of bleeding in some patients. Heidler [11] found numerous references to various etiologic factors in the production of interstitial ovarian hemorrhage but a woful lack of illustrative material. He reported interstitial hemorrhage in both ovaries of a woman, aged 22, who died of a recurrent verrucose aortic endocarditis. Streptococcus septicemia caused universal blood vessel injury in the form of metrorrhagia, bleeding gums, petechia of the skin and hemorrhages into the pleura, endocardium and stomach mucosa. The only reports he found at all similar to his were those of Olshausen,[17] whose patients had scurvy. Hemorrhages of a lesser extent have been observed in osteomalacia and even in newly born infants. Heidler [11] is skeptical concerning the occurrence of such hemorrhages as a result of anemia.

The ovaries that I had an opportunity to study were obtained after death from the body of a single woman, aged 38, who died of cardiac decompensation:

Following scarlet fever at the age of 12 years she had been an invalid because of marked dyspnea and edema of the lower extremities and on numerous occasions had such severe decompensation that death seemed inevitable. When admitted to the service of Dr. Joseph Jaros in the Frances E. Willard Hospital, she was suffering from labored, shallow respirations about 40 per minute; a pulse only occasionally perceptible, and a systolic murmur audible 6 inches away from the chest. For six months she had suffered from constant pain over the precordium, cough, general weakness, and an exaggeration of her dyspnea. A bluish tinge of the finger-tips and eyelids noted for two years also became more pronounced. For the last four weeks of this period she vomited at irregular periods but had no fever. In the hospital she was kept in a semi-Fowler position with knees elevated, received one-sixth grain (4 mg.) of morphine sulphate and two ampules of a digitalis preparation by injection and vomited eight times in fifty-seven hours. Her temperature was 97.2 F. rectally until six hours before death, when it rose to 99 F. The body was examined two hours after death.

The essential items of the anatomic diagnosis were: chronic indurative, deforming and acute thrombo-ulcerative mitral endocarditis; marked mitral stenosis; marked eccentric cardiac hypertrophy; petechiae of the skin; ecchymoses of the pleura and extensive interstitial hemorrhage of the ovaries; ascites; hydrothorax; anasarca; chronic passive hyperemia of the lungs, liver, spleen and kidneys; marked generalized arteriosclerosis.

At the postmortem examination the face and lips were cyanotic; there were five petechial hemorrhages of the skin of the front of the neck, moderate anasarca, and an ascites of about 1,000 cc. of clear straw-colored fluid. There were five subpleural ecchymoses of the left lung near the hilus, each about 1 cm. in diameter. There were about 200 cc. of clear yellow fluid in each pleural cavity, and this, with the space occupied by the huge heart, gave the impression that the lungs occupied about two thirds of their normal space.

The heart weighed 560 Gm. and measured 13.5 cm. vertically and 18.5 cm. transversely. The mitral orifice, viewed from the auricle, was from 15 to 17 mm. in diameter. The edges of the opening were hard, irregular, pitted, and coated with a thin layer of fibrin. The chordae tendineae were thick and so short that the front papillary muscle was attached almost

10. Runge, Hans: Untersuchungen über Ovarialhämatome, Arch. f. Gynäk. **116**: 116, 1923.
11. Geinitz, Rudolf: Zur Atiologie d. intraabdominellen Ovarialblutungen, Zentralbl. f. Chir. **55**: 2444 (Sept. 29) 1928. Heidler, H.: Hematoma ovarieinterstitiale, Monatschr. f. Geburtsh. u. Gynäk. **63**: 25 (May) 1923.
12. Kaboth, G.: Lebensbedrolicher Blutung aus dem Corpus Luteum, Arch. f. Gynäk. **121**: 138, 1924.
13. Penn, H. S.: Rupture of Ovary with Massive Hemorrhage as a Complication of an Acute Appendicitis, Boston M. & S. J. **187**: 183 (Aug. 3) 1922. Primrose, Alexander: Hemorrhage into the Peritoneal Cavity Caused by Accidental Rupture of the Ovary, Ann. Surg. **56**: 125, 1912.
14. Dolyňskyj, Marjian; and Benzion, Isidor: Ein Fall von lebensbedrolicher Corpus luteum-Blutung bei gleichzeitig bestehender intrauteriner Gravidität, Zentralbl. f. Gynäk. **50**: 117 (Jan. 9) 1926.
15. Cantoni, V.: Untersuchungen über Ovarialblutungen, Arch. f. Gynäk. **103**: 564, 1914.
16. Schumann, E. A.: Observations on Hemorrhages of Ovarian and Tubal Origin Not Associated with Ectopic Pregnancy, J. A. M. A. **77**: 692 (Aug. 27) 1921.
17. Olshausen, Robert: Die Krankheiten der Ovarien, Stuttgart, F. Enke, 1877, p. 18.

directly to the valve leaflet. Cultures of the heart's blood failed to produce a growth on blood agar.

The right lung weighed 650 Gm.; the left, 540 Gm. Both were boggy from edema and passive hyperemia and had an acute bullous emphysema along the ventral edge. The blood in all the pulmonary vessels examined was fluid, and, although a careful search was made for clots in both pulmonary artery and vein in the region of the ecchymoses in the left lung, none were found. There were calcified nodules of arrested tuberculosis in each upper lobe and in a tracheobronchial lymph gland.

The liver weighed 1,200 Gm. and grossly, as well as microscopically, bore the alterations of marked cyanotic atrophy. The other abdominal organs were the seat of a marked chronic passive hyperemia. Fatty and fibrous plaques typical of senile arteriosclerosis involved the lining of the arteries to the following extent: the coronary, renal, splenic, superior mesenteric, and pulmonary, 15 per cent; the thoracic part of the aorta, 50 per cent; and the abdominal part of the aorta, 75 per cent.

The ovaries were twice normal size, blotchy outside from subserous hemorrhages up to 5 mm. in diameter; alternating with tense gray-yellow cortex, and dripping with blood when cut across. The two ovaries were altered to the same extent and in a similar manner and, on many surfaces made by cutting, had a cortex from 1.5 mm. thick to the thickness of the serosa in the regions of great hemorrhage. The medulla resembled a bloody sponge with scattered fibrous septums.

The peritoneum of the pelvis and of the pelvic organs was dark red, with the finest radicles of the blood vessels visible. This was especially true of the fallopian tubes, which, near their fimbriated ends, were purple. The lining of the uterus was red with a slight pale yellow cast. The renal veins, common iliac and ovarian veins and inferior vena cava were hugely distended with fluid blood. Their lining was smooth and glistening. The fat about the kidneys and abdominal aorta was edematous.

In sections of both ovaries stained with hematoxylin and eosin and phosphotungstic acid hematoxylin, the prominent feature was the vast fresh hemorrhage. The red blood corpuscles were well preserved and all vessels, arteries, veins and capillaries were hugely distended. The media of the arteries was hyalinized as in the senile changes described by Sohma.[18] In all sections the walls of the arteries were intact, although frequently they were entirely surrounded by blood that saturated the stroma. Follicles in any stage of development were few but corpora albicantia were in evidence, often with multiple peripheral bloody impregnations continuous with the interstitial extravasations. In many regions nothing but blood was discernible in the central portions of the ovary, but toward the germinal regions columns of blood cells, one cell wide, alternated with a single layer of spindle-shaped cells from the shredded stroma. In the left ovary were two cysts, one in an old corpus luteum, the other in an atretic follicle, but there was no blood in the lumen of either, probably because their fluid contents withstood the pressure from without. The source of bleeding in both ovaries was the capillaries and smaller veins, in many of which actual rupture of the vessel was demonstrable. These vessels were usually some distance from follicles, and, indeed, were best seen when associated with small extravasations in an otherwise unchanged stroma. It was quite plain that bleeding from many places in the medullary part of each ovary had converted them into roughly oval masses with bloody projections, in shape somewhat like mulberries. These excrescences were easily seen grossly through the serosa. With this deep bleeding and its profound distention of the ovaries there were also numerous more or less discrete subserous capillary hemorrhages.

On the basis of the lack of evidences of disease of an inflammatory nature, coupled with the profound pelvic hyperemia, it was concluded that the ovarian hemorrhages occurred from stasis. This stasis in the pelvis was favored by the semi-Fowler position with the knees elevated and by the increased intra-abdominal pressure brought on by vomiting.

Clinically, the complications of mitral stenosis are legion and not infrequently perplexing. The prematurity and intensity of the pulmonary and hepatic disorders, the frequency of arrhythmic and embolic manifestations and the secondary production of insufficiency of the pulmonary valve serve as a starting point for the most varied disease pictures.[19] Dilatation of the left auricle may result in pressure on the recurrent laryngeal nerve and inequality of the pulse. The marked pulmonary surcharge is the basis for pulmonary hemorrhage of such frequency and volume that mitral stenosis is surpassed only by chronic bronchiectasis and phthisis as a cause of hemoptysis.[20] Functional incompetence of the pulmonary artery and its attendant murmur were described by Graham Steell, and Hall[21] asserts that it occurs in 4 per cent of all patients with mitral stenosis. Temporary regurgitation of the pulmonary valve may be produced in some people with healthy hearts simply by holding the breath.[22] The production of such an insufficiency with its protean manifestations of venous stasis seems inevitable in the final stages of mitral stenosis.

The hemorrhages into the ovaries that I examined resulted from stasis unaccompanied by infection or thrombosis. Such hemorrhages are unusual, as it is the stroma rather than the follicular apparatus that is involved.

645 South Central Avenue.

18. Sohma, M.: Ueber die Histologie d. Ovarialgefässe in den verschiedenen Lebensaltern, mit besonderer Berücksichtigung der Menstruations und Ovulationsklerose, Arch. f. Gynäk. **84**: 377, 1908.

19. Vaques, H.: Disease of the Heart, translated by F. Laidlaw, Philadelphia, W. B. Saunders Company, 1924.

20. Vinson, P.: Pulmonary Hemorrhage in Cases of Pulmonary Tuberculosis, Chronic Bronchiectasis and Mitral Stenosis, Proc. Staff Meet., Mayo Clin. **2**: 41, 1927.

21. Hall, J. N.: Functional Insufficiency of the Pulmonary Artery, Am. J. M. Sc. **148**: 476, 1914.

22. Cabot, R. C.: Physical Diagnosis, ed. 7, New York, William Wood & Co., 1922.

THE OPHTHALMIC TEST FOR SENSITIVITY TO HORSE SERUM

LOUIE N. CLAIBORN, M.D.
NEW HAVEN, CONN.

Since diphtheria antitoxin came into general use in 1894, serum therapy and prophylaxis for this and many other bacterial diseases have been employed widely. Following this type of treatment, serum reactions of greater or less severity have been frequent. In many clinics today the intradermal test for sensitivity to horse serum is employed before serum is administered. The test, however, has never been completely satisfactory because of the inconstancy of the relationship of serum reaction to sensitivity, as determined by this method. There is a definite need for a simple test which will give a more reliable index of the degree of susceptibility of an individual to serum.

In 1928, Spicer[1] reported a series of 353 patients in whom the intradermal and ophthalmic tests for sensitivity to horse serum were contrasted. The results obtained by her suggested that the ophthalmic test is of considerably more value than the intradermal. It seemed of importance to us to compare these two tests in a series of patients and determine their relative value in relation to serum reactions.

In our series the patients tested were instances in which a prophylactic injection of tetanus antitoxin was

From the Department of Surgery, Yale University School of Medicine.

1. Spicer, Sophie: Ophthalmic Test for Horse Serum Sensitivity Contrasted with the Intradermal, J. Immunology **15**: 335-342 (July) 1928.

indicated. They were for the most part ambulatory patients with minor injuries. Those receiving tetanus antitoxin were given 1,500 units intramuscularly. Two well known brands of tetanus antitoxin were used. The study extended over a considerable period of time, so that several different "lots" of serum were necessarily used.

The usual intradermal test was employed. Approximately 0.05 cc. of tetanus antitoxin (horse serum) diluted 1:10 was injected into the skin on the anterior surface of the forearm. The opposite arm was used as a control, physiologic solution of sodium chloride being injected instead of serum. The tests were read after twenty minutes. The intradermal reaction usually appeared in from fifteen to twenty minutes and subsided in from twelve to twenty-four hours. The degree of positiveness was determined by the size of the wheal, presence or absence of pseudopods, and the redness surrounding the site of injection. For the ophthalmic test, one drop of tetanus antitoxin was instilled into the conjunctival sac of one eye. The test was read after fifteen minutes, the remaining eye serving as a control. The positive reactions varied from a slight injection of the conjunctival vessels to a marked conjunctival reddening. When the test was markedly positive, the patient usually complained of some burning and itching of the eye. The positive ophthalmic reactions usually appeared in from ten to fifteen minutes and subsided entirely in from one-half to two hours. No untoward ophthalmic reactions occurred.

When desensitization was necessary, the following procedure was carried out: Of antitoxin diluted 1:10 with physiologic solution of sodium chloride, 0.1 cc. was injected subcutaneously; at half hour intervals the following amounts were injected: 0.2 cc., 0.5 cc., 1 cc. and 2 cc. From this point, undiluted antitoxin was used. Two and one-half hours after the original injection 0.5 cc. was given, and one-half hour later 1.2 cc. This completed the total amount of serum, 2 cc. comprising 1,500 units of tetanus antitoxin. For slight reactions occurring during desensitization, the injection that caused the reaction was repeated after a thirty minute interval and the remaining injections were given according to schedule. For severe reactions epinephrine hydrochloride (0.3 cc. of 1:1,000 solution) was given intramuscularly.

In 465 patients both the intradermal and the ophthalmic tests were employed. The patients varied considerably in age, the youngest being 6 months and the oldest 72 years of age; 321 (69 per cent) were males and 144 (31 per cent) were females. In fifty-seven patients the antitoxin was diluted 1:1 for the ophthalmic tests. Since no untoward reactions occurred, undiluted antitoxin was used for the remaining 408 patients. The positive tests both intradermal and ophthalmic were recorded from + to +++, depending on the severity of the reactions. For the sake of simplicity, however, the results have been grouped into one series and positive tests recorded merely as positive without qualification.

Serum reactions were divided into three groups: immediate reactions, those occurring in less than twenty-four hours; accelerated reactions occurring after twenty-four hours but before the fifth day; and delayed, or ordinary serum reactions, those occurring from the fifth day on. In some instances patients developed more than one type of reaction. These were classified, however, under the group in which they first appeared.

RESULTS

In all, 465 patients were tested: 26 (5.6 per cent) were positive to both tests; 99 (21.3 per cent) were positive to the intradermal but negative to the ophthalmic test, and 340 (73.1 per cent) were negative to both tests. All patients who had positive ophthalmic tests had also positive intradermal tests. Table 1 illustrates this.

TABLE 1.—*Results of Intradermal and Ophthalmic Tests in Four Hundred and Sixty-Five Patients*

	Skin + Eye +	Skin + Eye —	Skin — Eye +	Skin — Eye —	Total
Number of patients.....	26	99	0	340	465
Per cent.....	5.6	21.3	0	73.1	100

There were 426 patients who received tetanus antitoxin: 4 (0.9 per cent) of these had immediate serum reactions. Of 204 patients observed for a period of ten days or more, 12 (5.9 per cent) had accelerated serum reactions and 33 (16.1 per cent) had delayed or ordinary serum reactions. These results grouped according to tests are shown in table 2.

TABLE 2.—*Relation of Tests for Sensitivity to Serum Reactions in Patients Receiving Tetanus Antitoxin*

	Skin + Eye +		Skin + Eye —		Skin — Eye —		Total	
	No.	%	No.	%	No.	%	No.	%
Patients receiving tetanus antitoxin	17	4	79	18.5	330	77.4	426	....
Patients observed for ten days or more	11	5.4	43	21	150	73.5	204	47.8
Cases showing an immediate reaction (occurring in less than twenty-four hours)	2	11.8	0	0	2	0.6	4	0.93
Cases showing an accelerated reaction (occurring after twenty-four hours but before the fifth day)...	3	27.2	3	7	6	4	12	5.9
Cases showing delayed or ordinary serum reaction (occurring from the fifth day on).....	2	18.2	6	14	25	16.7	33	16.1
Cases showing no reaction.....	4	36.4	34	79	117	78	155	76

Desensitization was done on twenty patients: two of these (10 per cent) had immediate serum reactions so severe that complete desensitization was not attempted. Twelve patients were observed for at least ten days; of these, three (25 per cent) had accelerated serum reactions, and two (16.6 per cent) had delayed serum reactions (table 3).

TABLE 3.—*Serum Reactions Following Desensitization Patients Grouped According to Tests*

	Skin + Eye +		Skin + Eye —		Total	
	No.	%	No.	%	No.	%
Patients desensitized	13	65	7	35	20	....
Desensitized patients observed for ten days or more.....	9	75	3	25	12	60
Cases showing an immediate reaction	2	15.4	0	0	2	10
Patients showing an accelerated reaction	2	22.2	1	33.3	3	25
Cases showing delayed or ordinary serum reaction	2	22.2	0	0	2	16.6
Cases showing no reaction.....	3	33.3	2	66.6	5	41.6

Eighty-one patients with positive tests, four positive to both and seventy-seven positive to intradermal but negative to ophthalmic tests, were given antitoxin without desensitization. The positive ophthalmic tests in this group were not strongly positive. No immediate reactions occurred. Forty-two patients were observed

for at least ten days. Of these, three (7.1 per cent) had accelerated serum reactions, and six (14.3 per cent) had delayed serum reactions (table 4).

In a group of sixty-four patients who were known to have had horse serum previously, there was one (1.6 per cent) immediate serum reaction. Forty-four patients were observed for at least ten days; of these,

TABLE 4.—*Serum Reactions in Cases with Positive Tests Not Desensitized*

	Skin + Eye +		Skin + Eye —		Total	
	No.	%	No.	%	No.	%
Patients with positive tests not desensitized	4*	5	77	95	81	....
Cases observed for ten days	2	4.7	40	95.3	42	51.8
Cases showing an immediate reaction	0	0	0	0	0	0
Cases showing an accelerated reaction	1	50	2	5	3	7.1
Cases showing delayed or ordinary serum reaction	0	0	6	15	6	14.3
Cases showing no reaction	1	50	32	80	33	78.5

* All eye tests were weakly positive.

seven (15.9 per cent) had accelerated serum reactions and eight (18.2 per cent) delayed serum reactions (table 5).

Of the 204 patients observed for a period of at least ten days there were in all 49 cases (24 per cent) of serum reaction. The severity of the reactions varied considerably. Twenty-four were mild, characterized by urticaria, fever and general malaise; twenty-three were moderately severe, presenting urticaria, fever, general malaise, vomiting and joint symptoms; two

TABLE 5.—*Relation of Sensitivity Tests to Serum Reactions in Patients Previously Injected with Horse Serum*

	Skin + Eye +		Skin + Eye —		Skin — Eye —		Total	
	No.	%	No.	%	No.	%	No.	%
Patients with history of having had serum previously	9	14	21	32.8	34	53.1	64	....
Cases observed for ten days	9	13.6	15	34	23	52.3	44	68.8
Cases showing an immediate reaction	1	11.1	0	0	0	0	1	1.6
Cases showing an accelerated reaction	2	33.3	2	13.3	3	13	7	15.9
Cases showing delayed or ordinary serum reaction	2	33.3	2	13.3	4	17.4	8	18.2
Cases showing no reaction	1	16.6	11	73.3	16	69.6	28	63.6

were severe (immediate) with urticaria, sneezing, coughing, respiratory difficulty, fever and vomiting.

Spicer [1] summarized the results of her series as follows:

> Of the 353 patients tested, 293 received antitoxin: 251 intramuscularly and 42 intravenously. There were eighty-two positive test reactions: thirteen ophthalmic and sixty-nine intradermal. All those who gave a positive ophthalmic test were also positive intradermally. Of the thirteen patients giving a positive ophthalmic test, seven were given antitoxin and each had serum reaction. Of the sixty-nine who were positive intradermally, fifty-four received antitoxin and of these twenty-four had serum reaction. Of the 271 negative patients, 232 received antitoxin. Of these, twenty-eight had serum reaction. In all there were fifty-nine cases of serum reaction. Fifty-three were mild, consisting of urticarial rash with pruritus and elevation of temperature from 1 to 3 degrees F., lasting from twenty-four to forty-eight hours. Six of the fifty-nine serum reactions were rather marked. . . .

COMMENT

Four immediate reactions were observed. Two (18.8 per cent) severe reactions, occurring within a few minutes after the injection of a small amount of dilute serum, were seen in patients in whom both the ophthalmic and the intradermal tests were positive. The remaining two (0.6 per cent) were observed in patients in whom both tests were negative; the reactions, however, were mild and occurred several hours after all the serum had been given.

Accelerated reactions occurred in 27.2 per cent of the patients with both tests positive but in only 7 per cent of the patients with negative ophthalmic and positive intradermal tests, whereas they occurred in 4 per cent of those with both tests negative.

Delayed or ordinary serum reactions occurred about equally in the three groups: 18.2 per cent of the patients with both tests positive, 14 per cent of those with positive intradermal and negative ophthalmic tests, and 16.7 per cent of the cases with both tests negative had delayed serum reactions.

Desensitization in our small series of cases did not appreciably alter the percentage of serum reactions but, because of the slow administration, probably prevented more serious reactions.

In patients who had previously received horse serum the percentage of accelerated reactions was slightly higher than in those who gave no such history; the percentages of immediate and delayed reactions, however, were not noticeably changed.

All patients with positive ophthalmic tests also had positive intradermal tests. In general, the cases having positive ophthalmic tests had the most strongly positive intradermal tests. The results indicate that the intradermal test, although much more sensitive than the ophthalmic, is of less value for clinical use, whereas the ophthalmic test, although far from ideal, is of definitely greater value as a clinical index of susceptibility to serum reactions. The ophthalmic test is much simpler to do, since it involves no diluted serum or saline solution and obviates the need of two intradermal injections, which are bothersome and not a little painful to the patient.

SUMMARY AND CONCLUSIONS

1. In 465 patients, both the ophthalmic and the intradermal tests were employed; 5.6 per cent were positive to both tests, and 21.3 per cent were positive to the intradermal test only.

2. All those who had positive ophthalmic tests also had positive intradermal tests.

3. Undiluted tetanus antitoxin (horse serum) may be safely used for the ophthalmic test.

4. The ophthalmic test is less sensitive but of more value as a clinical index of susceptibility to serum reactions than the intradermal test.

5. Four hundred and twenty-six patients received tetanus antitoxin; 204 were observed for at least ten days; 24 per cent of the latter presented serum reactions.

6. Desensitization did not appreciably alter the percentage of serum reactions.

7. In patients who had previously received horse serum, a slightly higher percentage of accelerated serum reactions was observed.

8. Delayed or ordinary serum reaction occurred in approximately the same percentage (from 14 to 18) of patients with both tests positive, those with the ophthalmic test negative and the intradermal test positive, and those with both tests negative.

330 Cedar Street.

"MYXEDEMA HEART" WITHOUT EVIDENCE OF CARDIAC INSUFFICIENCY

REPORT OF TWO CASES

DAVID AYMAN, M.D.
BOSTON
HAROLD ROSENBLUM, M.D.
SAN FRANCISCO
AND
MARK FALCON-LESSES, M.D.
BOSTON

In 1918, Zondek [1] reported that a specific cardiac abnormality was sometimes associated with myxedema, and he called it "myxedema heart." He observed four such cases in which the condition was characterized by enlargement of the heart, feeble cardiac action (observed with a fluoroscope), slow heart beat, low amplitude of the auricular (P) and final ventricular (T) waves in the electrocardiogram, and normal blood pressure. Furthermore, after the administration of thyroid the size of the heart diminished, its action became more vigorous, its rate increased, and the P and T waves of the electrocardiogram became more upright, while the blood pressure remained normal. He mentioned nothing about the presence of symptoms of cardiac insufficiency. Before Zondek, Eppinger,[2] in 1917, writing on the subject of edema, had described two cases of enlargement of the heart and cardiac insufficiency with marked edema, in which previous therapy with digitalis and diuretics had failed. The administration of thyroid produced a considerable decrease in size of the heart and caused the edema and cardiac symptoms to disappear. Eppinger believed that the effect of thyroid was purely that of a diuretic. Although no basal metabolic rates were reported and no mention was made of the presence of myxedema, it is possible that Eppinger's two cases were examples of "myxedema heart." Since Zondek's original description, others [3] have reported a total of twenty-two cases of "myxedema heart."

Table 1 summarizes the more significant features of the twenty-two reported cases. The average decrease in transverse diameter of the heart after thyroid administration was 3.3 cm., with a minimal decrease of 1.0 cm. and a maximal of 6.3 cm. Symptoms or signs of cardiac insufficiency were mentioned as present in fifteen of the twenty-two cases. Thus, thirteen patients complained of shortness of breath on exertion, seven patients had cyanosis, six had pitting edema, five had râles at one or both lung bases, and four had enlargement of the liver. These symptoms and signs of cardiac insufficiency disappeared after thyroid therapy. The most striking cases in the literature are those reported by Fahr [3] and Davis,[3] in which extreme cardiac enlargement and severe symptoms and signs of cardiac insufficiency were not relieved by digitalis and rest, were then relieved by thyroid, next recurred on the withdrawal of thyroid, and again disappeared on administration of thyroid.

Despite this evidence, some observers doubt the existence of the condition called "myxedema heart." Willius and Haines,[4] in a study of 162 case records of "high-grade myxedema," failed to find the cardiac changes described by Zondek in any instance, whereas Fahr found it in eight out of twelve cases of myxedema seen in his clinic.[5] Christian [6] reviewed thirty-two cases of well established myxedema and stated that he found no case showing the enormous cardiac enlargement described by Fahr.[3] Case,[7] in an analysis of fifty-eight cases of myxedema, found none corresponding to Zondek's description. Means, White and Krantz [3] found but one case of "myxedema heart" in forty-eight cases of myxedema. However, the observations of these authors indicating the rarity or nonexistence of the condition "myxedema heart" should be explained. Thus, only 32 per cent of the patients of Willius and Haines had electrocardiographic studies. Furthermore, Willius stated in a recent personal communication that although six-foot heart plates were made in the majority of their cases, only a few post-therapy studies were conducted. Finally, mention was not made by Christian, by Case or by Means, White and Krantz of the use of serial teleroentgenograms or electrocardiograms before or during treatment with thyroid.

We have observed two cases that illustrate the salient features of "myxedema heart." These cases are presented as further evidence that the condition occurs and that it may exist without cardiac insufficiency.

REPORT OF CASES

CASE 1.—A woman, aged 42, married, came to the medical clinic of the Boston Dispensary complaining chiefly of weakness. She said that her present illness had begun three years previously, following an attack of tonsillitis, laryngitis and influenza. Since then she had suffered from weakness, which had progressed to the point where the least exertion caused almost complete exhaustion. She had also noted marked sensitiveness to cold, coarse scanty hair, ribbed and brittle finger nails, coarse dry skin, puffiness of the eyelids, hands and ankles, poor memory, lessened acuity of hearing, drowsiness, marked constipation and irregular menorrhagia. She said that she had had three attacks of typhoid, at the ages of 5, 9 and 15 years, respectively. Spontaneous abortions had occurred four times. She had three living children. At no time had she noticed shortness of breath.

Physical examination disclosed that the patient was moderately obese and of medium height. She appeared drowsy, and she moved and talked slowly. Her skin was extremely dry and was of a yellowish pallor, especially on the face. Her fingers were cold. There was no cyanosis. There was no moisture in the axillae. The hair was very coarse; it was scanty in the axillae, and the lateral third of each eyebrow

From the Medical and Research departments of the Boston Dispensary and from the Thyroid Clinic of the Beth Israel Hospital.

1. Zondek, H.: Das Myxödemherz, München. med. Wchnschr. **65:** 1180 (Oct. 22) 1918; **66:** 681 (June 20) 1919.

2. Eppinger, Hans: Zur Pathologie und Therapie des menschlichen Oedems, Berlin, Julius Springer, 1917, p. 9.

3. These include:
Assmann, H.: Das Myxödemherz, München. med. Wchnschr. **66:** 9 (Jan. 3) 1919.
Meissner, R.: Zur Klinik des Myxödemherzens, München. med. Wchnschr. **67:** 1316 (Nov. 12) 1920.
Laubry, C.; Mussio-Fournier, J. C., and Walser, J.: Syndrome angineux et insuffisance thyroïdienne, Bull. et mém. Soc. méd. hôp. de Paris **48:** 1592 (Nov. 21) 1924.
Fahr, George: Myxedema Heart, J. A. M. A. **84:** 345 (Jan. 31) 1925; Myxedema Heart, Am. Heart J. **3:** 14 (Oct.) 1927.
Means, J. H.; White, P. D., and Krantz, C. I.: Observations on the Heart in Myxedema, Boston M. & S. J. **195:** 455 (Sept. 2) 1926.
Zins, Berthold; and Rösler, Hugo: Kasuistischer Beitrag zur Beeinflussung des Myxödemherzens durch Thyreoidin, Wien. Klin. Wchnschr. **39:** 1360 (Nov. 18) 1926.
Schittenhelm, A., and Eisler, B.: Ueber die Wirksamkeit des Thyroxins bei Endokrin bedingten Störungen, Klin. Wchnschr. **6:** 1935 (Oct. 8) 1927.
Duden, Charles: Myxedema with Cardiac Decompensation and Hypertension Which Disappeared Under Thyroid Medication, J. Missouri M. A. **26:** 25 (Jan.) 1929.
Holzman, J. E.: Myxedema Heart, Am. Heart J. **4:** 351 (Feb.) 1929.
Ziskin, Thomas: Angina Pectoris Associated with Myxedema Heart, U. S. Vet. Bur. M. Bull. **6:** 24 (Jan.) 1930.
Davis, J. C.: Myxedema Heart, Ann. Int. Med. **4:** 733 (Jan.) 1931.
Tung, C. L.: The Status of the Heart in Myxedema, Am. Heart J. **6:** 734 (Aug.) 1931.

4. Willius, F. A., and Haines, S. F.: The Status of the Heart in Myxedema, Am. Heart J. **1:** 67 (Oct.) 1925.

5. Davis (footnote 3).

6. Christian, H. A.: The Heart and its Management in Myxedema, Rhode Island M. J. **8:** 109 (July) 1925.

7. Case, C. E.: An Analysis of Fifty-Eight Cases of Myxedema, Clifton M. Bull. **11:** 112, 1925.

was absent. There was slight puffiness of the lower eyelids. The tongue was clean and smooth, and its papillae were normal in number and size. The mucous membranes were of normal color. The thyroid gland was not palpable. The lungs had normal resonance; there were no râles. The heart was not enlarged to percussion. The sounds were distant, the rate was 60 a minute, and the rhythm was regular. Murmurs were not heard. The blood pressure was 120 systolic and 80 diastolic. The radial arteries felt soft. The edge of the liver was just palpable on inspiration and not tender. The spleen was not palpable. A mass, which was not tender, was felt above the symphysis pubis just to the left of the median line. On vaginal examination this mass was found to be a symmetrically enlarged, freely movable, hard uterus about twice the normal size. The knee jerks were equal and active. There was no pitting edema of the extremities. The rest of the physical examination was negative.

Further examination showed the following: The height was 160 cm. (63 inches) and the weight 76.7 Kg. (168 pounds). The Hinton, Wassermann and modified Kahn tests were negative. A specimen of urine showed a specific gravity of 1.023, no albumin, no sugar, and nothing abnormal in the sediment. The hemoglobin (Sahli) was 72 per cent, the erythrocytes numbered 3,700,000 and the leukocytes 6,525 per cubic millimeter. An examination of a blood smear showed slight achromia, slight variation in size and shape of the erythrocytes, and a normal differential count. The blood sedimentation rate was 3 mm. in one hour. The guaiac test for occult blood in the stool was negative. Gastric analysis on three occasions did not disclose any free hydrochloric acid either in the fasting contents or after an Ewald test meal; the total acidity on several occasions was 17 or less; gastric analysis after injection of 0.5 mg. of histamine intramuscularly disclosed free acidity of 5 (Ewald's scale) and a total acidity of 6. Roentgen studies of the gastro-intestinal tract were negative. An orthodiagram of the heart showed slight generalized enlargement producing a pear-shaped outline (table 2 and fig. 1 *A*). The measurements were: MR,[8] 4.4 cm.; ML, 8.7 cm.; TR, 13.1 cm.; internal diameter of the thorax, 25.7 cm. $\left(\frac{13.1}{25.7} = 51 \text{ per cent}\right)$; L, 13.8 cm.; B, 9.6 cm., and G. V., 7.3 cm. An electrocardiogram showed a heart rate of 50, the rhythm regular, minute P and T waves in lead 1 (0.3 and

TABLE 1.—*Analysis of Twenty-Two Cases of "Myxedema Heart" Previously Reported in the Literature**

Author	Sex	Age, Years	Basal Metabolic Rate, per Cent	Transverse Diameter of Heart, Cm.		Blood Pressure, Mm. Mercury		Symptoms and Signs of Cardiac Insufficiency				
				Before Treatment	After Treatment	Before Treatment	After Treatment	Shortness of Breath	Cyanosis	Pitting Edema	Enlarged Liver	Râles at Lung Bases
Zondek [1]	♂	"45 to 55"	....	13.4	....	"Varied from 100 to 125 in all cases"		..	..	..	..	..
	♂		....	16.0	....			..	..	..	..	..
	♂		....	19.7	14.0			..	..	..	..	..
	♂		....	....	....			..	..	..	..	..
	♂	42	....	....	....	.....	.....	+	..	..	..	..
Assmann [3]	♂	20	....	16.7	12.7	95:	125:	..	+	..	..	..
Meissner [3]	♀	56	....	20.0	15.5	.....	.....	+	..	..	..	..
Laubry, Mussio-Fournier and Walser [3]	♂	47	....	....	....	120:80	130:70	+	..	..	..	..
Fahr [3]	♀	46	—25	19.0	12.7	110:70	120:80	+	+	+	+	+
	♀	68	—21	16.0	12.3	.....	.....	+	..	..	..	..
	♀	55	—35	15.2	11.7	.....	.....	+	+	+	+	+
	♀	..	—39	14.4	13.0	100:65	.....	+	+	+	..	+
	♀	46	—36	13.0	11.9	110:65	.....	+	+	+	..	..
	♂	49	—31	18.2	15.9	"Normal"		+	..	..	..	..
Means, White and Krantz [3]	♀	44	—34	14.0	11.7	148:90	.....	+	..	..	+	..
Zins and Rösler [3]	♀	47	—15	14.9	11.6	115:	.....	+	+	..	..	..
Schittenhelm and Eisler [3]	♀	49	—24	18.0	14.7	150:96	150:90	..	..	..	..	..
Duden [3]	♀	58	....	22.0	18.5	180:130	130:85	+	..	+	+	..
Holzman [3]	♂	58	—20	19.7	18.0	110:68	108:64	..	..	..	..	+
Ziskin [3]	♀	43	—28	14.0	13.0	120:80	.....	..	..	..	..	..
Davis [3]	♀	48	—27	19.0	12.8	115:60	.....	+	+	+	..	+
Tung [3]	♀	51	—31	15.0	12.8	.....	.....	..	..	..	..	..

* In the table, ♂ indicates male; ♀, female. When data are not given, it is because they were not mentioned.

TABLE 2.—*Analysis of Authors' Two Cases of "Myxedema Heart" Before, During and After Thyroid Administration*

Case	Day of Observation	Treatment by Thyroid, Gm. per Day*	Basal Metabolic Rate, per Cent	Weight, Kg.	Heart Measurements, Cm.†							Electrocardiographic Data						Blood Pressure, Mm. Mercury	Hemoglobin, per Cent (Sahli)	Erythrocytes, Millions
					Thorax	MR	ML	TR	L	B	G.V.	P_1, Mm.	T_1, Mm.	P_2, Mm.	T_2, Mm.	P-R, Sec.	Q-S, Sec.			
1	1	0.030	—53	76.7	25.7	4.4	8.7	13.1	13.3	9.6	7.3	0.3	0.5	0.0	0.0	0.24	0.06	120:80	72	3.8
	4	0.1	....	75.0	....	...	...	....	....	....	...	0.5	1.0	0.2	0.7	0.22	0.06			
	9	0.12	....	74.7	26.0	4.0	9.0	13.0	13.0	9.8	5.3	...	...	...	...	....	....	120:80		
	18	0.20	....	....	26.6	4.2	8.3	12.5	12.5	9.4	5.8	0.5	1.8	0.5	1.0	0.21	0.08			
	22	0.26	....	72.7	....	...	...	....	....	....	...	...	...	...	...	....	....	.....	72	3.7
	28	0.39																		
	34	0.39	....	....	....	...	...	....	....	....	...	0.8	2.0	0.8	1.2	0.20	0.06	120:80		
	39	0.30	+ 6																	
	46	0.26	....	68.1	26.0	3.7	8.3	12.0	12.3	7.9	5.2	0.8	3.0	1.0	2.2	0.18	0.06	105:70	64	3.7
	54	0.23																		
	63	0.23	± 0	66.1																
	85	0.23	....	64.7	25.9	3.8	8.3	12.1	11.3	8.2	4.6	1.0	4.0	1.0	2.5	0.18	0.08	.....	72	
	102	0.23	....	64.1	....	...	...	....	....	....	...	...	...	...	...	....	....	.....	78	3.7
2	1	0.20	—44	69.5	24.7	5.2	8.8	14.0	14.0	10.8	4.3	1.0	1.5	1.0	1.5	0.15	0.06	110:80	62	3.9
	10	0.20	—12	66.0	....	...	...	....	....	....	...	...	...	...	...	....	....	.....	62	3.9
	17	0.20	—12	66.3																
	22	0.26	—16	66.0	....	...	...	....	....	....	...	...	...	...	...	....	....	.....	68	3.6
	28	0.33	— 8	66.3	24.7	5.0	8.1	13.1	13.8	10.6	4.0	1.5	3.0	1.5	3.0	0.14	0.06	100:70		
	35	0.33	—13	66.0	24.9	4.3	8.9	13.2	13.8	11.1	5.0	1.5	4.0	1.5	4.0	0.14	0.06	80:50		
	42	0.33	— 1	66.0	....	...	...	....	....	....	...	...	...	...	...	....	....	85:50	62	3.5
	49	0.39	— 1	66.3	24.9	4.3	8.5	12.8	13.5	10.5	4.0	1.5	4.5	2.0	4.0	0.14	0.06			
	57	0.48	— 5	65.5	....	...	...	....	....	....	...	...	...	...	...	....	....	95:50	60	4.2
	64	0.42	+ 5	....	24.9	3.6	7.7	11.3	12.8	9.9	4.4	...	...	...	...	....	....	75:50		
	71	0.39	....	65.2	....	...	...	....	....	....	...	1.5	5.0	2.0	4.0	0.14	0.04	100:55		

* In cases 1 and 2, no thyroid had been given up to the first day of observation. The initial metabolism determinations were made before any medication was given. In case 2, 4 Gm. of iron and ammonium citrate in capsules was given daily from the first to the twenty-second day; 4 Gm. of the same medicine in 25 per cent solution from the twenty-third to the thirty-fifth day; 6 Gm. of the same solution from the thirty-sixth to the forty-ninth day, and 3 Gm. of reduced iron in capsules from the fiftieth to the seventy-first day.

† In case 1 measurements were made by orthodiagram and in case 2 by teleroentgenogram.

8. MR indicates distance from middle of thorax to outermost right border of heart; ML, distance from middle of thorax to outermost left border of heart; TR, MR + ML; L, length; B, breadth, and G.V., great vessels.

0.5 mm., respectively) and P and T waves absent in leads 2 and 3 (fig. 2). The P-R interval was 0.24 second. The basal metabolic rate was —53 per cent (by the Aub-Du Bois standard).

Diagnoses of myxedema, secondary anemia, and uterine fibromyoma were made. Following treatment with desiccated thyroid (table 2), the patient's basal metabolic rate became normal, and all the symptoms disappeared. Her anemia remained unimproved. Twenty-eight pounds (12.7 Kg.) in weight was lost during treatment. The heart decreased in size, and the electrocardiogram became normal. At the time of the last determination of the basal metabolic rate, following

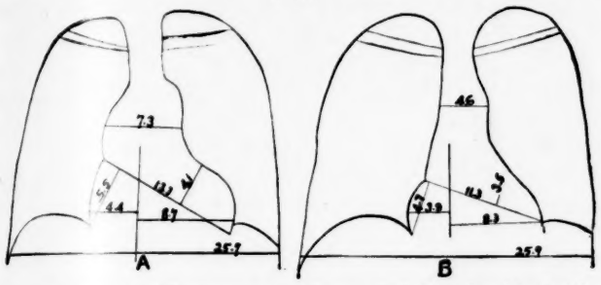


Fig. 1 (case 1).—Measurements of heart: *A*, before thyroid administration; *B*, on eighty-fifth day of thyroid administration.

thyroid administration over a period of sixty-three days, the rate had risen to ± 0 per cent. Thyroid medication was continued in appropriate amounts. An orthodiagraphic tracing made on the eighty-fifth day of treatment now showed the following measurements (fig. 1 *B*): MR, 3.8 cm.; ML, 8.3 cm.; TR, 12.1 cm.; internal diameter of the thorax, 25.9 cm. ($\frac{12.1}{25.9}$ = 46 per cent); L, 11.3 cm.; B, 8.2 cm., and G. V., 4.6 cm. An electrocardiogram made on the same day revealed P and T waves of normal height (1.0 mm. and 4.0 mm., respectively, in lead 1, and 1.0 mm. and 2.5 mm., respectively, in lead 2). The P-R interval was reduced to 0.18 second. In all, five orthodiagraphic tracings, two teleroentgenograms of the heart, and seven electrocardiograms were made before and during treatment.

CASE 2.—A woman, aged 30, single, came to the Out-Patient Medical Clinic of the Beth Israel Hospital complaining chiefly of "feeling cold all of the time." Two and a half years previously she had undergone an operation involving curettage of the uterus, resection of the right ovary, and ventral suspension of the uterus. Since the operation she had felt weak continuously and had tired easily. She had gained 20 pounds (9 Kg.) since the onset of the symptoms and had had continual bilateral tinnitus. About six months prior to admission she had begun to notice a heavy feeling in her head. Several weeks before entrance her friends had remarked that her face was very puffy. She had never had palpitation but during the present illness she had had slight dyspnea on walking rapidly.

The only point of significance in the past history was that she had had recurrent attacks of bronchial asthma during the preceding sixteen years; these attacks had been particularly marked in the winter.

Physical examination disclosed that the patient was moderately obese. The skin was pale, and the face and eyelids were puffy. The skin of the arms and legs was dry, thick and coarse. The hair was sparse and somewhat coarse. The tongue was slightly thickened and broad. There was no cyanosis. The thyroid gland was not palpable. The lungs showed normal resonance, vesicular breath sounds and no râles. The heart was not enlarged to percussion. The heart sounds were distant, the rhythm was regular, and murmurs were absent. The heart rate was 60. There was slight general hyperesthesia of the abdomen, but no masses or organs were palpable. The liver was not felt. The extremities were thickened, and the legs showed slight pitting edema. The blood pressure was 110 systolic and 80 diastolic.

The basal metabolic rate was —44 per cent (Aub-Du Bois standard). The hemoglobin was 62 per cent (Sahli) and the erythrocytes numbered 3,900,000 per cubic millimeter. Examination of the stained blood showed that the erythrocytes were moderately achromic and exhibited moderate variation in size and shape. The differential count was normal. The urine revealed no abnormality. A teleroentgenogram of the heart exhibited a transverse enlargement with blunting of the apex (fig. 3 *A*). The measurements were: MR, 5.2 cm.; ML, 8.8 cm.; TR, 14.0 cm.; internal diameter of the thorax, 24.7 cm. ($\frac{14.1}{24.7}$ = 57 per cent; L, 14.0 cm.; B, 10.8 cm., and G. V., 4.3 cm. An electrocardiogram taken on the same day showed P and T waves of the following heights: P_1, 1.0 mm.; T_1, 1.5 mm.; P_2, 1.0 mm.; T_2, 1.5 mm. Gastric analysis disclosed no free hydrochloric acid after the intramuscular injection of 0.5 mg. of histamine. Fractional analysis was done according to the technic of Polland and Bloomfield.[9]

A diagnosis of myxedema and secondary anemia was made. Treatment consisted of the administration of 0.20 Gm. (3 grains) of desiccated thyroid daily and 1 Gm. of iron and ammonium citrate in capsules four times daily.

The patient improved rapidly and the basal metabolic rate became normal. On the sixty-fourth day of observation and of thyroid medication, the basal metabolic rate was + 5 per cent. A teleroentgenogram of the heart now showed the following measurements (fig. 3 *B*): MR, 3.6 cm.; ML, 7.7 cm.; TR, 11.3 cm.; internal diameter of the thorax, 24.9 cm. ($\frac{11.3}{24.9}$ = 45 per cent); L, 12.8 cm.; B, 9.9 cm., and G. V., 4.4 cm. The heart sounds improved in quality, appearing much less distant than before treatment. At times a few musical râles were heard in the lungs. The blood pressure varied between 110 systolic, 80 diastolic and 75 systolic, 50 diastolic. The P and T waves in the electrocardiogram became progressively more upright, so that on the seventy-first day of treatment the following measurements were obtained: P_1, 1.5 mm.; T_1, 5.0 mm.; P_2, 2.0 mm.; T_2, 4.0 mm. About 3.5 Kg. (8 pounds) of weight was lost during the first ten days of treatment, but after that there was practically no loss of weight. The anemia did not respond to treatment. The skin became smoother and warmer, and the puffiness of the face and lids disappeared. The variations in weight, basal

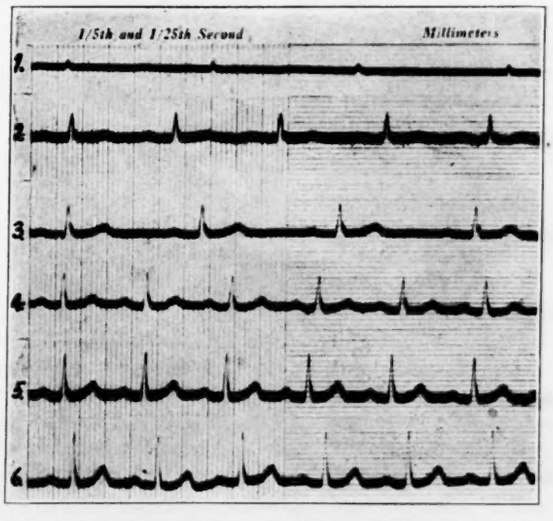


Fig. 2.—Lead 2 of each of six serial electrocardiograms in case 1. The first was taken before treatment and the remaining five at various intervals during thyroid administration, as indicated in table 2.

metabolic rate, number of erythrocytes, percentage of hemoglobin, size of the heart, and observations by electrocardiogram are shown in table 2. Symptomatically the patient showed marked improvement. The bowels became regular, whereas previously laxatives had been required daily. The patient felt mentally alert and did not tire so easily as before treatment. Although the attacks of asthma were not lessened, sensitiveness to cold disappeared, and dyspnea on exertion also decreased definitely.

9. Polland, W. S., and Bloomfield, A. L.: Normal Standards of Gastric Function, J. Clin. Investigation **9**: 651 (Feb.) 1931.

COMMENT

The two cases conform to Zondek's original description of "myxedema heart," since the patients exhibited cardiac enlargement, feeble cardiac action under the fluoroscope, slow heart rate, normal blood pressure, and low amplitude of the P and T waves in the electrocardiogram. All were restored to normal with thyroid medication. The one diagnostic feature in both cases was roentgenographic enlargement of the heart, which disappeared when thyroid was administered. The other criteria stressed by Zondek were no more prominent in these cases than in any case of myxedema.

EXCLUSION OF CERTAIN FACTORS AS POSSIBLE CAUSES OF DECREASE OF CARDIAC ENLARGEMENT

The explanation of the cardiac enlargement and its subsequent disappearance with thyroid medication is complicated by several factors, chief among which are secondary anemia and obesity, both of which are almost invariably associated with myxedema.

1. *Secondary Anemia.*—Decrease in size of the heart has been reported by Ball [10] following improvement of severe secondary anemia. However, as there was no significant improvement of the anemia in our two cases (table 2), this factor may be excluded as an explanation of the decrease in size of the heart. In addition, the anemia was mild in both cases.

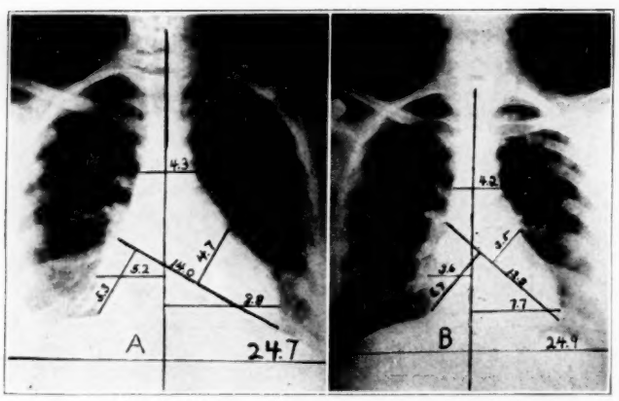


Fig. 3 (case 2).—Size of heart: *A*, before thyroid administration; *B*, on sixty-fourth day of thyroid administration.

2. *Obesity.*—In case 1 the large amount of weight that was lost during treatment (28 pounds, 12.6 Kg.) demands a consideration of the effect which loss of weight by itself may have on the size of the heart. Master and Oppenheimer [11] reported an increase in the size of the heart in 51 per cent of ninety-seven obese patients. Sixty-five of the patients had arterial hypertension. These writers showed roentgenograms of one case to exemplify reduction in size of the heart, which took place with loss of weight. Master and Oppenheimer stated: "This enlargement is probably more apparent than real, in that it is due to the elevation of the diaphragm by the abdominal fat." On the other hand, Scharpff [12] found a distinctly measurable reduction in the true size of the heart following loss of weight of 7 Kg. (15 pounds) or more in obese persons with or without arterial hypertension. He emphasized that the decrease is real and probably due to the disappearance of "compensatory cardiac dilatation" present in his series of obese persons. He was careful to exclude errors due to changes in diaphragmatic and thoracic position in his roentgenograms of the heart. Two thirds of Scharpff's older obese patients exhibited the "compensatory dilatation" of the heart. Scharpff also found that the administration of as much as 0.3 Gm. daily of thyroid had no effect on the size of the heart in both young and old obese persons without myxedema.

It is impossible to say how much of the loss of 28 pounds (12.7 Kg.) in weight in case 1 was due to loss of fluid and how much to loss of body fat, for "the increase in body weight of hypothyroidism is not due entirely to myxedema but in part to increased fat deposit." [13] In case 2, on the contrary, the loss of weight during treatment was slight (10 pounds, 4.3 Kg.) and, according to Scharpff, too small to affect the size of the heart.

3. *Radiographic Technic.*—Aside from organic factors mentioned, the errors inherent in the roentgenographic technic of measuring the heart might give apparent increase or decrease in size. Apparent decrease in size of the heart due to changes in the position of the diaphragm may be excluded in case 1, since variation in diaphragm level was not observed in the five serial orthodiagrams. Furthermore, the width of the thorax in four of the orthodiagrams was constant within a range of 3 mm. (table 2). In case 2 also, the serial teleroentgenograms showed the diaphragmatic position unchanged, and the transverse diameter of the thorax varied only within 2 mm.

PROBABLE CAUSES OF "MYXEDEMA HEART"

It has been shown that the cardiac enlargement in the two cases reported was not due to secondary anemia, "compensatory cardiac dilatation" of the obese or technical radiographic error. The possible causes of "myxedema heart" in these patients were (1) cardiac dilatation secondary to a flabby heart muscle, (2) a myxedematous condition of the heart itself or of the tissues about the heart, as described by Horsley,[14] and (3) existence of pericardial fluid.[15]

CHANGES IN THE SIZE OF THE GREAT VESSELS

In case 1 the total width of the great vessels decreased from 7.3 cm. before treatment to 4.6 cm. under thyroid administration. In case 2 there was little or no change in the width of the great vessels. Zondek [1] originally mentioned the occurrence of widening of the great vessels, but he stated that it did not always return to normal under thyroid treatment. Meissner [3] and Fahr [3] also noted the increase in width of the great vessels. Zins and Rösler [3] found that the great vessels decreased in size in proportion to the decrease in size of the heart.

ELECTROCARDIOGRAPHIC CHANGES

The observed electrocardiographic changes were such as might occur in any case of myxedema, as Means [16] and White [17] have pointed out. In cretinism,

10. Ball, David: Change in the Size of the Heart in Severe Anemia, Am. Heart J. **6**: 517 (April) 1931.
11. Master, A. M., and Oppenheimer, E. T.: A Study of Obesity, J. A. M. A. **92**: 1652 (May 18) 1929.
12. Scharpff, W.: Ueber Veränderung der Herzgrösse nach Enfettungskuren, Deutsches Arch. f. klin. Med. **165**: 1 (Sept.) 1929.
13. Howard, C. P., and Mills, E. S.: Obesity, in Oxford Medicine, New York, Oxford University Press **4**: 197, 1929.
14. Horsley, V.: The Thyroid Gland: Its Relation to the Pathology of Myxedema, Brit. M. J. **1**: 211 (Jan. 31) 1885.
15. Gordon, A. H.: Some Clinical Aspects of Hypothyroidism, Canad. M. A. J. **20**: 7 (Jan.) 1929.
16. Means, J. H.: Oxford Monographs on Diagnosis and Treatment, New York, Oxford University Press **4**: 304, 1928.
17. White, P. D.: Heart Disease, New York, Macmillan Company, 1931, pp. 387-388.

likewise, Thacher[18] has reported lowering, flattening, or even inversion of the T wave, which can be brought up to normal by the administration of thyroid. These electrocardiographic changes have not been found in conditions associated with lowered metabolism other than myxedema.[19] The origin of the low amplitude of the auricular (P) and final ventricular (T) waves, was investigated by Nobel, Rosenblüth and Samet,[20] who demonstrated, by the use of needle electrodes placed over the anterior thoracic wall in patients with childhood myxedema, the presence of P and T waves not recorded by the conventional leads from the extremities. They felt that the increased resistance of the skin in myxedema might account for the decreased voltage of the P and T waves of the electrocardiogram. The occurrence, however, of changed auriculoventricular conduction time as indicated by changes in the P-R interval (case 1) cannot be explained on the basis of changes in the skin but rather predicates an actual disturbance within the heart. Case 2 showed no abnormality in conduction time.

ABSENCE OF CARDIAC INSUFFICIENCY

There was no evidence of heart failure in case 1, either from the history or from the physical examination. In case 2 there was slight dyspnea on exertion before treatment and some improvement of dyspnea after the size of the heart became normal. This dyspnea may have been due to the associated bronchial asthma. The diagnosis of "myxedema heart" in these two patients, therefore, was made without much evidence of heart failure.

This brings up the question Does "myxedema heart" exist without symptoms or signs of cardiac insufficiency? In an analysis of the literature of "myxedema heart" we have noted (table 1) that thirteen (60 per cent) of the twenty-two patients complained of shortness of breath. The symptom of shortness of breath, however, was found by Means[16] to be present in 90 per cent of forty-five patients with myxedema in whom "myxedema heart" was reported as absent. Likewise, Fahr[3] quoted Hirschfelder as writing that myxedema patients, in general, became short of breath on slight exertion. Therefore, either shortness of breath is not a diagnostic symptom of "myxedema heart" or else "myxedema heart" is an extremely common manifestation in myxedema. The literature further indicates (table 1) that less than 30 per cent of the reported cases of "myxedema heart" showed objective evidence of cardiac insufficiency, such as cyanosis, râles at the lung bases, enlarged liver, and pitting edema of the ankles. It seems evident, therefore, that the diagnosis of "myxedema heart" does not require the presence of signs or symptoms of cardiac insufficiency. Indeed, the low level of bodily and circulatory activity in myxedema[21] may prevent the development of severe cardiac symptoms and thereby conceal the presence of "myxedema heart."

SUMMARY

In two cases of "myxedema heart," both patients had clinical, roentgenographic and electrocardiographic manifestations which were characteristic of the condition as described by previous workers and which became normal after adequate treatment with thyroid. Enlargement of the heart and its return to normal with adequate thyroid treatment is stressed as the one diagnostic feature of "myxedema heart," since the other abnormalities are usually found in all cases of myxedema. Factors other than thyroid medication may decrease the size of the heart during treatment for myxedema. Little, if any, evidence of heart failure was found in either of the cases reported, and hence it is believed that cardiac insufficiency, although sometimes found, is not characteristic of "myxedema heart." The suggestion is made that "myxedema heart" may be more common than is usually supposed, and therefore the need of securing serial teleroentgenograms of the heart and electrocardiograms before and during the treatment of every patient with myxedema is indispensable to exclude the possibility of the presence of "myxedema heart."

371 Commonwealth Avenue.

18. Thacher, Catharine: The Electrocardiogram in Cretinism and in Mongolian Idiocy, Am. J. Dis. Child. **28**: 25 (July) 1924.
19. Reid, W. D., and Kenway, Florence L.: Electrocardiographic Signs Associated with Low Basal Metabolism, Endocrinology **13**: 191 (March-April) 1929.
20. Nobel, E.; Rosenblüth, A., and Samet, B.: Das Elektrokardiogram des kindlichen Myxödems, Ztschr. f. d. ges. exper. Med. **43**: 332, 1924.
21. White (footnote 17). Blumgart, H. L.; Gargill, S. L., and Gilligan, D. R.: Studies on the Velocity of Blood Flow in Myxedema and Thyrotoxicosis, J. Clin. Investigation **9**: 91 (Aug.) 1930.

ACUTE APLASTIC ANEMIA COMPLICATING ARSPHENAMINE THERAPY

REPORT OF A CASE TREATED FOR SYPHILIS COINCIDENT WITH TUBERCULOSIS

I. D. BRONFIN, M.D.
AND
ISIDOR SINGERMAN, M.D.
DENVER

The first to give a clinical description of aplastic anemia was Ehrlich,[1] in 1888, whose patient developed this disease condition following a severe uterine hemorrhage. Many case reports followed with speculative discussions as to whether this form of anemia is a distinct disease entity or a symptom-complex of purpura hemorrhagica. Duke[2] emphasizes that the course and symptoms of this disease depend in the main on which of the three principal blood-forming elements of the bone marrow is mostly affected. The usual symptoms of progressive anemia will predominate when the erythropoietic tissue is chiefly affected; agranulocytosis with subsequent infection, notably angina, when there is failure of regeneration of leukocytes, and purpura with hemorrhage when there occurs a considerable diminution in the blood platelets. This valuable conception is important to bear in mind, since it helps to give a proper appraisal of some of the blood dyscrasias which occasionally follow the use of arsphenamines in the treatment of syphilis.

From a review of the literature on toxic effects from arsphenamines, one gains the impression that in not a few instances was difficulty experienced in making a differential diagnosis between aplastic anemia, agranulocytic angina and purpura hemorrhagica. Farley[3] classified his series of cases under the general heading of "depressed bone-marrow function from the use of arsphenamines," with emphasis on the phenomenon of agranulocytosis. Among his seven cases, one gave the classic blood picture and symptoms of aplastic anemia,

From the National Jewish Hospital at Denver and the University of Colorado School of Medicine.

1. Ehrlich, Paul: Ueber einen Fall von Anämie mit Bemerkungen über regenerative Veränderungen des Knochenmarkes, Charité-Ann. **13**: 800, 1888.
2. Duke, W. W.: Aplastic Anemia, J. A. M. A. **91**: 720-722 (Sept. 8) 1928.
3. Farley, D. L.: Depressed Bone-Marrow Function from the Arsphenamines, Am. J. M. Sc. **179**: 214-227 (Feb.) 1930.

while the others showed varying degrees of aplasia, as determined by the blood examinations. Of Kastlin's [4] two cases of agranulocytic angina, one developed typical symptoms of purpura hemorrhagica with marked granulopenia after the sixth of a series of injections of neoarsphenamine. There was only a moderate decrease in the erythrocytes and hemoglobin. Moore [5] and his co-workers, who have shown that damage to the bone marrow, as determined by the blood picture, occurs in the majority of nonfatal cases reacting to arsenical drugs, are probably correct when they conclude that "these blood changes differ only in degree from the maximally severe reaction as seen in this case," referring to their report [6] on a fatal case of aplastic anemia following neoarsphenamine treatment.

The confusion that exists with regard to a proper classification of these blood dyscrasias is further shown by Dodd and Wilkinson,[7] who summarize twenty-four cases of "agranulocytic aplasia of the bone marrow" following arsenical medication, including one of their own. Of the total number, twenty-one patients had hemorrhage and twenty had anemia ranging from slight to severe. There was considerable variation in the blood picture. Leukopenia from as low as 136 white cells up to about 4,000 was present in eighteen, normal in two, and 29,000 and 76,000 in two cases, respectively. The polymorphonuclear count was 9 per cent in three cases, from 7 to 13 per cent in six cases, and from 30 to 88 per cent in eight cases. Of the eleven cases with necropsy reports, ten showed hemorrhage, nine aplastic bone marrow and in two the examination was incomplete. The authors very properly comment that there must have been cases other than those included in their table, reported as agranulocytosis, aplastic anemia, arsenic poisoning, purpura and the like, and concede that a specific name has not yet been given to this form of arsenic intoxication. While we have nothing to offer that might clarify this halo of confusion covering the various types of arsenical blood poisoning, we feel that a report of an undoubted case of acute aplastic anemia following arsphenamine medication is justifiable because of its relative rarity. Considering the fact that this complication is nearly always fatal, the prophylactic aspects have not been sufficiently stressed.

According to Stokes,[8] there is no known way of preventing or predicting an acute aplastic anemia, but it is recognized to be a rare complication. Cole [9] and his associates, reporting on 1,212 cases treated for syphilis with a total of 78,350 arsenical injections, had 214 patients presenting toxic manifestations resulting in 12 deaths. No case of aplastic anemia has been observed by them in this series and only two cases of purpura hemorrhagica, in both of which recovery occurred. Stephens [10] reports two cases observed during the past five years in a series of 1,200 patients who received a total of 14,000 injections. In one of the cases he noted evidence of the beginning of active marrow regeneration in the presence of numerous islands of erythroblastic and myeloblastic tissue, but at no time during the month that this patient was under observation was there noted any evidence of such regenerative activity in the peripheral blood. Yet, the author holds out the opinion that there might be some hope for recovery if these patients could be successfully protected from infection. Semenza [11] stresses the gravity of this complication and urges systematic examinations of the blood during arsphenamine treatment in subjects with symptoms of functional deficiency of the blood-making organs. In one of his two cases reported, the administration of arsphenamine had an aggravating effect on the blood dyscrasia previously diagnosed as aplastic anemia. The latter, therefore, cannot be attributed solely to arsphenamine. As a last resort measure, splenectomy was performed in this case without any beneficial results.

The onset of the process may begin within from twelve to forty-eight hours after the injection. It may follow the initial dose or any subsequent dose. Slowly progressive weakness and pallor may precede the hemorrhagic manifestations or the development of stomatitis by one or two weeks. Sometimes there appear a few purpuric spots on the lower extremities or abdomen a day or two after the injection preceding the fatal one. These prodromal phenomena are of great importance and should always be watched for in an individual undergoing active treatment for syphilis. This is especially applicable to the definitely substandard type of patient or the one suffering from another coincident disease.

The distinguishing features of the blood picture in this disease are a moderate or marked decrease in hemoglobin and red cells, a low or normal color index, a progressive leukopenia with a rapid reduction in the granulocytes and a relative increase of lymphocytes, the disappearance of reticulated red cells, the absence of any abnormal cells seen in other types of anemias, and a marked reduction in blood platelets. The clinical course is usually rapid, nonremittent, and lasting rarely more than two or three weeks, although the average duration of the so-called primary or idiopathic types of aplastic anemia, according to Schneider,[12] have an average duration of six months. The tendency to early hemorrhagic manifestations is quite characteristic. Slight epistaxis, slight bleeding from the gums or an insignificant conjunctival hemorrhage may be the first symptom to alarm the patient sufficiently to bring it to the attention of the physician. As the disease progresses, there is manifest bleeding from nearly all mucous membranes. Fever may appear early or late; it sometimes dates its onset following a blood transfusion. Hyperpyrexia is the rule toward the end and is probably due to bronchopneumonia, which is a frequent terminal complication. Purpuric spots, most numerous over the skin of the anterior and posterior aspects of the chest, arms and forearm, may fade in one area and appear in another. In the mouth these purpuric spots often coalesce and undergo ulceration. When hematemesis is present and blood in the stools appears, abdominal pain may be marked, but there is no hepatic or splenic enlargement.

The treatment is chiefly prophylactic. A history of any previous reaction calls for painstaking vigilance during the entire course of treatment. The slightest

4. Kastlin, G. J.: Agranulocytic Angina, Am. J. M. Sc. **173:** 799-813 (June) 1927

5. Moore, J. E., and Foley, F. E. B.: Serious Reactions from the Salvarsan and Diarsenol Brands of Arsphenamine, Arch. Dermat. & Syph. **1:** 25 (Jan.) 1920.

6. Moore, J. E., and Keidel, Albert: Stomatitis and Aplastic Anemia Due to Neoarsphenamine, Arch. Dermat. & Syph. **4:** 169-176 (Aug.) 1921.

7. Dodd, Katharine; and Wilkinson, S. J.: Severe Agranulocytic Aplasia of the Bone Marrow, J. A. M. A. **90:** 663-665 (March 3) 1928.

8. Stokes, J. H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1926.

9. Cole, H. N.; De Wolf, Henry; McCuskey, J. M.; Miskjian, H. G.; Williamson, G. S.; Rauschkolb, J. R.; Ruch, R. O., and Clark, Taliaferro: Toxic Effects Following Use of the Arsphenamines, J. A. M. A. **97:** 897-903 (Sept. 26) 1931.

10. Stephens, D. J.: Aplastic Anemia Occurring During Treatment of Syphilis with Arsphenamine, Am. J. Syph. **15:** 333-349 (July) 1931.

11. Semenza, Carlo: Aplastic Anemia and Arsphenamine Intoxication, Clin. med. ital. **62:** 527 (June) 1931; abstr. J. A. M. A. **97:** 1185 (Oct. 17) 1931.

12. Schneider, J. P.: Aplastic Anemia, Am. J. M. Sc. **156:** 799-807 (Dec.) 1918.

purpuric manifestation is an indication for at least a temporary discontinuance of the drug. Frequent blood counts may give early evidence of abnormal bone marrow function and constitute a warning for greater caution. The early administration of sodium thiosulphate is of doubtful therapeutic value but should be used as a routine. Blood transfusions are disappointing, as are likewise calcium and the various commercial coagulants, such as fibrinogen or thromboplastin. The results obtained by Stockton and Franklin [13] in a case of purpura hemorrhagica from the use of antivenin caused us to use this product in the amount of 10 cc. intramuscularly without any effect on the hemorrhagic symptoms.

The following report is illustrative of the salient points in the clinical picture described:

C. B., a man, aged 32, admitted to the National Jewish Hospital, Sept. 3, 1930, complained of weakness, impaired appetite, slight cough and expectoration. He had had pulmonary disease for two years, for which he received active treatment in institutions. An examination showed moderately advanced pulmonary tuberculosis involving both upper lobes with probable infraclavicular cavitation on the right. The sputum was positive; a Wassermann test of the blood was 4 plus; a blood count showed slight anemia.

The clinical course was progressive with malaise, increasing weakness, irregular fever, ranging from 99.2 to 101 F., and vague intestinal symptoms. Accordingly, pneumothorax was induced on the right side, Nov. 15, 1930. Despite a satisfactory compression of the diseased lung area, the case pursued an unfavorable course. In the belief that syphilis hindered recovery, antisyphilitic treatment was instituted. He had previously received two courses of treatment in other institutions with neoarsphenamine alternating with preparations of bismuth and mercury. The Wassermann reaction of the blood after the first course had become negative. The last injection of neoarsphenamine was given, July 1, 1930, and was followed by a pruritic, papular rash over the extremities which cleared in one week. Our treatment began, Jan. 4, 1931, and consisted of twelve injections of neoarsphenamine in doses of from 0.3 to 0.6 Gm. at intervals of from five to seven days, the total amount of the drug being 3.75 Gm. Improvement in the patient's condition occurred, the temperature reached normal, and the sputum diminished.

The course was uneventful until, following the injection of 0.3 Gm., February 25, there appeared the next day a discrete nonpruritic erythematous papular eruption over the extremities and trunk. The patient thought the eruption was similar to that which occurred in July, 1930; it was, therefore, not seriously regarded. However, following the injection of March 2, the eruption assumed the character of purpura. Petechial hemorrhages appeared on the right conjunctiva, upper lip and buccal mucosa. Slight bleeding from the nose followed. Preceding and following the last treatment, the patient complained of dull headache, weakness, slight epistaxis and transient attacks of dizziness. The temperature was normal. There was marked pallor, although it was noted in retrospect that this had already been present for some time and had been gradually increasing during the preceding two weeks.

March 7, five days after the last injection of neoarsphenamine, hematologic studies, as shown in the accompanying table, revealed a severe anemia, a leukopenia with relative lymphocytosis, and prolonged bleeding time. These results were interpreted at first as evidence of severe arsenical intoxication; 0.5 Gm. of sodium thiosulphate was at once administered intravenously, followed by two similar doses at twelve hour intervals, and a generous liver diet instituted. Two days later, the blood changes were more pronounced. The erythrocytes were normal in size and shape. Achromia was absent. No nucleated red cells were seen. A definite diagnosis of aplastic anemia was made. A transfusion of 500 cc. of citrated blood, March 9, failed to produce any important change in the clinical picture. Despite a marked pallor, he felt well and was calm. Petechial hemorrhages appeared at this time in the skin over the trunk and extremities. These, in the course of a few days, would fade and then reappear in other areas. New crops of petechiae appeared in the mucous membrane of the gums, lips, tongue and cheek. Bleeding from the gums and nose occurred intermittently. Transfusions were given again, March 11 and 13. The one given on the latter date caused some improvement in the blood picture, although the percentage of neutrophils remained distinctly reduced, and blood platelets were absent. Purpuric manifestations continued. March 14, the patient complained of soreness in the mouth and throat. Hemorrhagic areas appeared on the right tonsil and gradually increased in extent on the sixteenth. A fetid odor to the breath was present. Up to this time his general condition was satisfactory. Except for a febrile reaction of 104 F. following the third transfusion, his temperature averaged 99.4 F., the pulse 96. There were few subjective complaints, except for a gradually increasing dyspnea.

However, from March 17 onward, his condition rapidly declined. The temperature fluctuated between 102 and 105 F.,

Blood Examinations and Clinical Course

Date	Hemoglobin, per Cent	Red Blood Cells in Millions	White Blood Cells	Polymorphonuclears	Myelocytes	Metamyelocytes	Large Mononuclears	Lymphocytes	Platelets	Bleeding Time, Min.	Clotting Time, Min.	Color Index	Comment
10/ 6/30	82	4.390	11,000	67	..	..	3	28	.....	..	..	0.95	
3/ 2/31	Last treatment of neoarsphenamine, 0.3 Gm.												
3/ 7/31	58	2.990	5,000	28	..	..	..	70	.....	22	4	1.0	Sodium thiosulphate; liver diet; purpura extremities and trunk; petechiae on mucosae; epistaxis
3/ 9/31	38	1.770	3,900	23	..	..	3	73	200,000	..	..	1.1	Transfusion, p. m., 500 cc.; temperature, 99.2 F.
3/11/31	42	2.010	3,200	22	..	..	1	76	.....	..	..	...	No nucleated red blood cells; more petechiae on extremities; transfusion, p. m., 500 cc.; temperature, 99.4 F.
3/12/31	53	2.370	2,800	22	..	..	1	77	.....	..	..	...	Temperature, 100 F.
3/13/31	53	2.390	2,000	9	1	1	..	88	None	18	..	...	Temperature, 99.8 F.; petechiae on gums, tongue, lips; bleeding from gums; transfusion, p. m., 500 cc.; temperature, 104 F.
3/16/31	63	3.390	4,000	7	3	3	7	77	None	..	..	...	Transfusion, 500 cc., 3/17/31
3/18/31	50	2.800	3,800	16	..	..	2	82	120,000	..	..	...	Temperature, 102.6 F.; angina hematemesis
3/19/31	40	2.190	2,400	8	..	3	8	88	150,000	..	..	...	Hemorrhagic areas in throat spreading; one reticulocytic cell on slide; antivenin, 10 cc., p. m.
3/20/31	37	2.210	2,400	4	3	1	5	83	80,000	..	..	...	Temperature, 102 F.; transfusion, p. m., 500 cc.; reaction with temperature 107.8 F.
3/22/31	40	2.520	3,800	6	2	2	2	88	90,000	..	..	...	Temperature, 105.6 F., frank epistaxis; bloody sputum; drowsy
3/24/31	33	2.000	1,800	6	..	3	9	82	60,000	..	..	...	Stupor; muscular twitchings; transfusion, p. m.; reaction with fever 108 F.; death

13. Stockton, M. R., and Franklin, G. C. H.: Antivenin Therapeusis in Purpura, J. A. M. A. **96:** 677-678 (Feb. 28) 1931.

and the pulse between 120 and 140. Malaise and weakness increased. His color became chalk white. The hemorrhagic areas in the throat spread. They coalesced over the left tonsil, which became swollen and ulcerated. Several petechiae on the left border of the tongue coalesced and became ulcerated. Hemorrhage into the vitreous was noted on the nineteenth. In the evening of the same day he was given 10 cc. of antivenin intramuscularly. This resulted in a marked diminution of the bleeding time, but the hemorrhagic symptoms continued. Swallowing became extremely painful. Epistaxis continued freely. The vomitus was bloody and the stools were tarry. A transfusion, March 20, was followed by a febrile reaction of 108 F. A distressing cough developed and was productive of bloody sputum. Drowsiness, stupor and, finally, muscular twitching set in. The last transfusion was given, March 24, and death occurred two hours later.

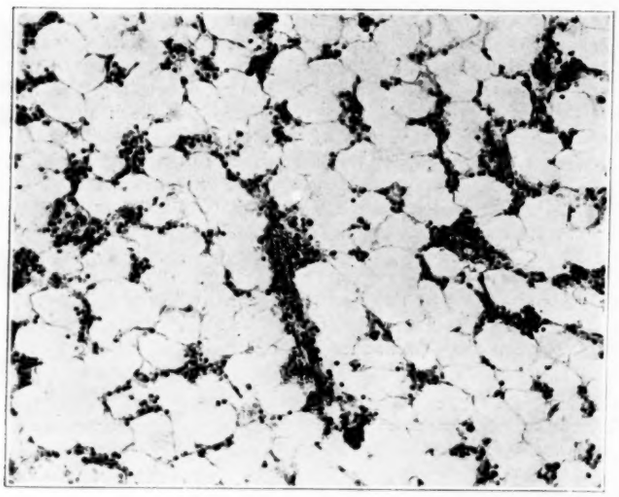


Fig. 1.—Section of bone marrow from the sternum, reduced from a photomicrograph with a magnification of 135 diameters. Hematoxylin and eosin stain. In this illustration and in figure 2, the marrow is largely fatty and shows no hyperplasia; myeloid cells and nucleated red cells are present in small numbers; lymphocytes and plasma cells are more numerous than in normal marrow; there is no edema or hemorrhage.

The observations at necropsy as reported by Drs. William C. Johnson and William Black of the University of Colorado School of Medicine were as follows:

1. Aplasia of bone marrow.
2. Anemia.
3. Purpuric hemorrhages in the skin of the face, neck and thorax.
4. Hemorrhage into the abdominal muscles.
5. Hemorrhage into the mucosa of the stomach, the pelvis of the left kidney and the bladder.
6. Chronic pulmonary tuberculosis, bilateral and nodular.
7. Partial atelectasis of the right lung with pneumothorax.

Sections from the anterior ends of the ribs near the costochondral junctions showed rarefaction of the cells lying in the interstices of the adipose tissue, of which there was a considerable amount. The erythropoietic elements, megakaryocytes and megaloblasts, were very few in number. Sections from the sternum were similar in appearance to those from the ribs. Owing to the haste necessary in performing this autopsy, bone marrow from other locations was not obtained.

COMMENT

The etiology of primary aplastic anemia is not known. It is a disease of young adults. Since many subjects frequently give a history of preceding pallor, a congenital defect of the bone marrow has been suggested by some as a predisposing factor. Although our patient did show a moderate pallor, the condition of the blood was essentially normal on admission, except for a slight degree of secondary anemia. However, there was noted a gradually increasing pallor, especially during the two or three weeks preceding the fatal dose of neoarsphenamine. It is not unlikely that earlier blood studies would have revealed alterations in the normal ratio of the cellular elements to constitute a warning to modify the treatment.

According to Musser and Wintrobe,[14] chronic intoxication with chemical poisons is responsible for secondary aplastic anemia. Selling's[15] experimental and clinical studies of benzene poisoning led many observers to attribute the arsenical intoxications to the double benzene ring which the arsphenamines contain, but so far it has not been proved that these compounds liberate free benzene when injected into the circulation. Yet, Dodd and Wilkinson[7] could not find a case of such aplasia of the bone marrow following the administration of arsenic not containing the benzene ring. In comparison with the wide use of the arsphenamines, depressed bone marrow function, and especially aplastic anemia, is indeed very rare. There must therefore exist idiosyncrasies which, in many instances, give prodromal manifestations, such as pruritus, pallor, malaise and evanescent purpuric eruptions. In our case, the last three symptoms were present but their significance was not recognized.

To what extent the coincident tuberculosis was a factor is a matter of speculation. That the syphilitic infection was active was demonstrated by the positive Wassermann reaction of the spinal fluid obtained post mortem. As the clinical manifestations were out of proportion to the pulmonary lesion, antisyphilitic treatment was deemed indicated.

SUMMARY AND CONCLUSIONS

In a case of acute arsenical aplastic anemia terminating fatally in twenty-two days, treatment was primarily for pulmonary tuberculosis, but the syphilitic infection apparently retarded recovery. The history of a cutaneous rash during a previous course of arsphenamine treatments gave the patient and ourselves a sense of false security. The inescapable conclusion is that a patient under arsphenamine medication should have frequent blood examinations, even in the absence of any untoward manifesations, and the drug should be immediately discontinued as soon as such symptoms as malaise, pallor, itching of the skin and purpuric manifestations are noted.

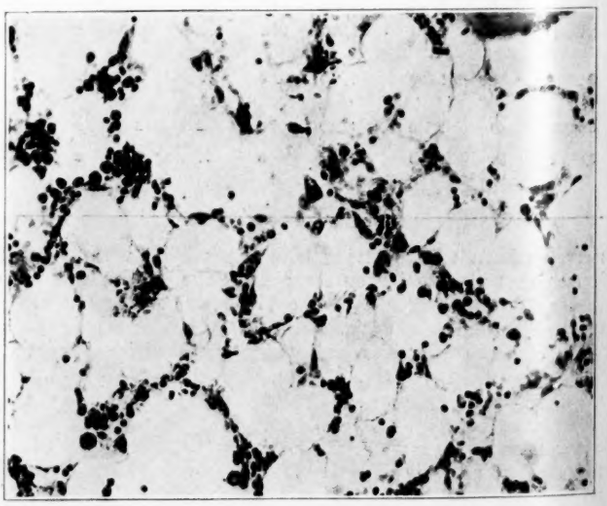


Fig. 2.—Section of bone marrow from the rib, reduced from a photomicrograph with a magnification of 250 diameters.

14. Tice's Practice of Medicine **6**: 823.
15. Selling, L.: Benzol as a Leukotoxin, Johns Hopkins Hosp. Monographs, 1913.

RENAL CARBUNCLE IN INFANCY

MEREDITH F. CAMPBELL, M.D.

Attending Urologist to the Babies' and New York Nursery and Child's Hospitals; Assistant Attending Urologic Surgeon, Bellevue Hospital

NEW YORK

Renal carbuncle, so called because of its anatomic semblance to carbuncle elsewhere, is a localized massive suppuration within the kidney due to bacterial metastasis (usually staphylococcus), often produces marked toxemia, is rarely uncomplicated, is difficult to diagnose and, unrecognized or inadequately treated, entails a high mortality. Discussion of the lesion is found more often in surgical textbooks than in the literature; less than fifty cases have been reported. I have been unable to find a record of its occurrence in infancy. The two cases herewith reported, a boy and girl each admitted to the hospital at the age of 8 weeks with renal carbuncle and perirenal abscess and subsequently operated on, are unique because of the tender age of the patients. However they are here described more especially because they forcibly demonstrate by specific example an insufficiently recognized principle of medical practice, namely, that infants and children are subject to practically every form of urologic disease which one is accustomed to associate with adult life, and, when clinical manifestations indicate a thorough urologic examination or radical urosurgical treatment, extreme youth is no contraindication. Nor does the clinical picture differ vastly in juveniles and adults.

ETIOLOGY AND PATHOLOGY

Although renal carbuncle may occur at any age, its incidence is highest in the fourth and fifth decades. The incidence in males is twice that in females; the lesion is more often found on the right side. Renal injury, whether by external blow, stone or urinary stasis, predisposes to carbuncle. The direct cause is bacterial metastasis, predominantly staphylococcal, from a focus elsewhere, usually the skin (furunculosis, carbuncle, paronychiae, abrasion, wound), but may originate in an osteomyelitis, oral infection and the like. In my two cases furunculosis preceded. In case 1 this condition was a chief complaint on admission to the hospital.

The bacterial embolus arrives hematogenously and localizes in the parenchyma, usually toward a kidney pole; a metastatic abscess results with leukocytic infiltration, necrosis and, by the establishment of secondary circumferential foci, extension. The lesion may spread peripherally elevating the cortical contour and, with or without actual capsular perforation, commonly causes secondary perinephritis or perinephric abscess. While the site of the initial localization has been variously described, the character of the gross lesion suggests interlobular artery embolism with suppurative involvement, chiefly of the cortex peripheral thereto. Usually the remainder of the organ appears surprisingly normal; most rarely are two carbuncles found. Moreover, the lesion is characteristically unilateral; bilateral lesions have been described only twice. In one of my patients (case 2) a similar metastatic lesion involved the adjacent suprarenal medulla (fig. 5).

If the bacterial virulence is low or the local tissue resistance high, the abscess may become walled off and ultimately be replaced by scar or calcification; more likely, it will spread as previously described.

SYMPTOMS

The symptoms are those of infection: toxemia, fever, often chills, sweats, gastro-intestinal upsets, anorexia, nausea or vomiting, loss of weight, and pain. The latter is usually most acute in the costovertebral angle. Rarely, localizing symptoms are absent. Sometimes the kidney is palpable, but more often the fixed mass of perinephritis or perinephric abscess will be found. Urinary disturbances are usually absent.

The preoperative diagnosis of renal carbuncle is exceedingly difficult; few times has it been correctly made. It is suggested by a history of cutaneous suppuration within the past few weeks, a loin mass, tenderness in the costovertebral angle, fever and, as a rule, repeated sweats. A marked leukocytosis with high polymorphonuclear count quite regularly exists. These manifestations are common to perinephric abscess also and thereby increase the differential diagnostic difficulties. In case 1 carbuncle and furunculosis coexisted; in case 2 furunculosis antedated carbuncle one month.

Urinalysis reveals little; a mild infection with pyuria may be found. As a rule, the urinary manifestations are disproportionate to the degree of renal involvement unless, perchance, the abscess has established drainage into the pelvis. An abundance of casts commonly means marked toxic nephritis of the better kidney. Ureteral catheterization usually discloses good renal function with or without infected urine. In a few instances pyelography has shown pelvis displacement, compression or distortion. Renal tumor was diagnosed preoperatively in case 2 (fig. 3). In case 1 the pelvis of the involved organ was greatly displaced (fig. 1). A plain roentgenogram may reveal an enlarged kidney or with perinephric abscess, obliteration of the isolateral psoas muscle outline and a lumbar spinal concavity.

Seldom can carbuncle be differentiated from acute suppurative pyelonephritis or acute multiple renal abscess. If the lesion directly underlies the peritoneum, intraperitoneal disease—appendicitis, cholecystitis, salpingitis or peritonitis—is commonly misdiagnosed. If signs of peritoneal irritation are lacking, the patient may be treated for grip, influenza, typhoid or, with subphrenic suppurative extension, diaphragmatic pleurisy or pneumonia. The diagnosis is most often made at the time of renal exploration for perinephric abscess. As a corollary, with a thorough inspection of the entire kidney surface when a perinephric abscess is being drained, a renal carbuncle will more often be recognized. On the other hand, as in both cases here reported, one may feel that the extreme condition of the patient does not warrant extensive exploration at the initial operation.

TREATMENT

Frequently, the severity of the local disease, the general toxemic manifestations and an advanced toxic nephritis of the better organ demand nephrectomy. If the patient is a good surgical risk, renal decapsulation with incision and drainage or excavation of the carbuncle may be performed. In a few instances the "core" of the lesion has been found separated and is easily extracted. Emergency reoperation with nephrectomy is often demanded when the more conservative methods are employed; the surgical risk is then greatest. An associated perinephric abscess must be liberally drained and, if one is going to be conservative, coexistent urinary obstruction appropriately eliminated.

From the Babies' Hospital (Departments of Pediatrics and Surgery, College of Physicians and Surgeons, Columbia University) and the Pediatric Service of New York Nursery and Child's Hospital, Dr. O. M. Schloss, director.

In a statistical summary of forty-seven cases, Moore [1] found that primary nephrectomy was performed in twenty-one cases, with two deaths; incision and secondary nephrectomy in seven, with no deaths, incision and drainage only in thirteen, with two deaths; incision and secondary excision of the carbuncle in two, with no deaths, and enucleation of the carbuncle in two instances with secondary nephrectomy in one, with one death. Therefore, when the general condition of the patient or of his better kidney permits, primary nephrectomy appears to be the safer procedure.

Fig. 1 (case 1).—Marked left renal displacement mesially by complicating perinephric abscess. The pelvic outlines are normal, affording no indication of existent carbuncle.

REPORT OF CASES

CASE 1.—*History.*—I. T., a girl, aged 8 weeks, was admitted to New York Nursery and Child's Hospital, April 8, 1931, because of furunculosis, chronic constipation and a left loin mass of three weeks' duration. Moreover, she had failed to regain her birth weight of 8¼ pounds (3,742 Gm.).

Furunculosis of the chest and back had existed since the age of 3 weeks. Many of the lesions had been incised and drained. For three weeks previous to admission there had been no bowel movement without an enema. During this time the mother noted a left loin mass. Birth and family history were negative.

Examination.—The patient was markedly emaciated and anemic; she looked sick. The skin was thin and covered with dry furuncles over the chest and back. Both ear drums were reddened. The pharynx, heart and lungs were normal. The abdomen was distended. There was a bulging of the left side due to a large, oval, firm, fixed, smooth surfaced mass filling the entire loin. The remainder of the abdomen was tympanitic. Rectal examination revealed a fixed mass high in the left lower quadrant.

Urinalysis revealed: hazy and alkaline urine; specific gravity, 1.014; albumin, a trace; sugar, 0; acetone, a trace; white blood cells, 1 to 2 per high power field; culture, Staphylococcus albus. Blood count revealed: red blood cells, 3,460,000; hemoglobin, 60 per cent; white blood cells, 46,950; polymorphonuclears, 58 per cent; large lymphocytes, 19 per cent; small lymphocytes, 12 per cent; transitionals, 11 per cent.

April 20, a roentgen series of the gastro-intestinal tract showed medial displacement of the descending colon with marked spasticity. April 23, a barium enema showed a spastic descending colon.

April 28, a cystoscopy was done without an anesthetic. The bladder urine was hazy. There was mild cystitis and trigonitis. Both ureters catheterized easily. Indigo carmine, injected intravenously, appeared in deep concentration from each side in five minutes. A left pyelogram was made and revealed a normal pelvis with mesial displacement (fig. 1). A specimen from the left ureter showed an occasional leukocyte. Culture yielded Staphylococcus albus. A specimen from the right ureter was normal.

The diagnosis was perinephric abscess. During this period the temperature ranged between 100 and 103 F., with continued loss of weight. Two preoperative blood transfusions were given.

Operation and Result.—April 30, an operation for perinephric abscess was performed. The usual loin kidney incision was made and drainage was done. About 2 ounces of foul smelling pus was evacuated. The abscess was found to engulf the kidney. The organ was not explored because of the extreme condition of the patient. Two cigaret drains were inserted with closure. Culture of the perirenal pus yielded Staphylococcus albus and B coli.

Following the operation, the child was doing well for several days when the loin drainage became unsatisfactory. The wound was reopened, but a gradual downward course with slowly rising temperature and loss of weight led me to believe that renal suppuration probably existed. A preoperative transfusion was given and another operation performed, June 4. Loin exploration and nephrectomy was done. The child at this time weighed 6 pounds 3 ounces (3,107 Gm.). The kidney showed a typical carbuncle of the upper outer pole (fig. 2) with locally elevated cortical surface. The remainder of the organ was normal.

Fig. 2 (case 1).—External and section appearance of carbuncle. The cortical elevation is admirably shown, as is the intrarenal process. The remainder of the organ appears normal.

1. Moore, T. D.: Renal Carbuncle, J. A. M. A. **96:** 754 (March 7) 1931.

Postoperatively the child did poorly, suffering marked vasomotor collapse and abdominal distention. Death occurred on the sixth day with a temperature of 107 F. During the six-day interval two transfusions were given and, during the course of the surgical period, numerous hypodermoclyses. Blood taken shortly before death showed nonprotein nitrogen

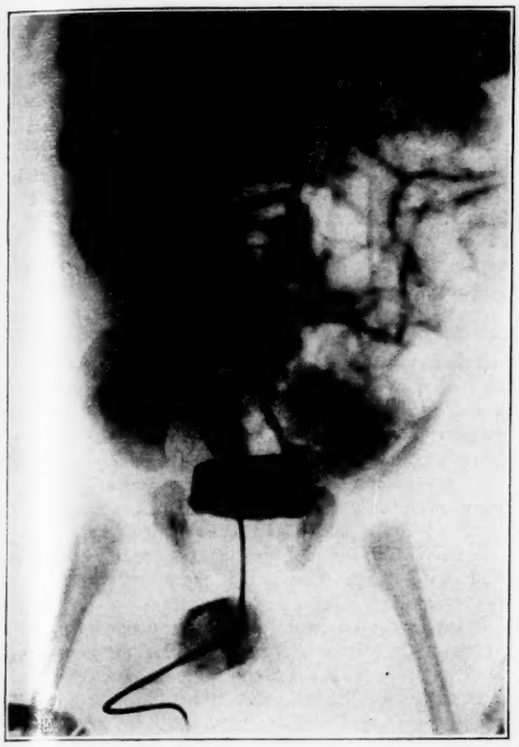


Fig. 3 (case 2).—Right pyelogram in a boy, aged 8 weeks. Urographic diagnosis, tumor. The pelvic distorsion is due to extrarenal pressure (perinephric abscess) rather than carbuncle (compare with figure 5). The possible urographic diagnostic difficulties in renal carbuncle are apparent.

400 mg. per hundred cubic centimeters. Autopsy was refused. Because I wished to preserve the kidney specimen in its entirety, histologic studies were not made.

CASE 2.—*History.*—E. S., a boy, aged 8 weeks, was admitted to Babies' Hospital, Feb. 25, 1931, because, for the past two weeks, all feedings were vomited and the abdomen was enlarged and hard. Subsequently, it was learned that shortly before the present onset the child suffered furunculosis of the back. The child, born at term, had been delivered with forceps and was breast fed for one month.

Examination.—Physical examination revealed a protuberant abdomen with a well rounded, slightly nodular fixed mass felt in the right loin extending from the umbilicus laterally to the back and from the costal margin to the iliac crest. The temperature was 102.2 F. The remainder of the physical examination was negative.

The laboratory examination revealed a nasopharyngeal culture positive for thrush. Urinalysis revealed: acid urine; specific gravity, 1.018; albumin, a marked trace; sugar, 0; acetone, a marked trace; diacetic acid, 0; scattered leukocytes. Nonprotein nitrogen of the blood was, 27.8 mg. per hundred cubic centimeters. A phenolsulphonphthalein test showed first hour, 22.5 per cent; second hour, 12.5 per cent. Blood count revealed: red blood cells, 2,200,000; hemoglobin, 48 per cent; white blood cells, 13,950; polymorphonuclears, 68 per cent; lymphocytes, 24 per cent; eosinophils, 3 per cent; mononuclears, 1 per cent; myelocytes, 2 per cent; myeloblasts, 2 per cent.

February 26, intravenous urography was done. A film taken one and a half hours after the injection of iopax showed a normal left renal pelvis. The right pelvis was larger than normal; the calices were blunted. Cystoscopy was done, March 3. A sugar-ball anesthesia was given. Cystoscopically the bladder was normal. The catheter was passed 10 cm. up the right ureter without difficulty; a ureteral specimen was collected and a pyelogram made (fig. 3). Because the intravenous urogram indicated a normal appearing left organ and because of the delicate condition of the baby, left catheterization was not done. Indigo carmine intravenously did not appear from the right side in ten minutes' observation. The right ureter specimen showed pus + + and hemolytic Staphylococcus albus.

Operation and Result.—On the basis of the physical examination and the pyelogram, a renal tumor was diagnosed, a transfusion given and an operation performed, March 5. Expecting to perform a nephrectomy for a large renal tumor, I did a right transperitoneal exposure (T-shaped), rectus margin rib to iliac crest with median extension 6 cm. posteriorly toward the spine. In the loin, free pus was released and from 1 to 1½ ounces evacuated. Digital exploration revealed an extensive perinephric abscess with marked induration and friability of the fatty tissue. As I felt that the local pathologic changes and precarious condition of the patient did not justify extensive exploration, two cigaret drains were inserted and the wound was closed.

Postoperatively the wound drained freely and the child did moderately well for six days when, during a dressing, he began to cry. Massive evisceration through the infected abdominal wound resulted. Overlapping closure was done at once. The adjacent bowel in the right loin was densely adherent to the peritoneum overlying the abscess site and to the wound line as well. Scant reaction followed this closure operation; three days postoperatively, yellow feces appeared medially in the wound in small amounts. There was moderate distention but no definite signs of peritonitis. The child died eleven days later of bilateral bronchopneumonia.

Autopsy.—This was performed by Dr. Martha Wollstein and Dr. Beryl Page. The anatomic diagnosis was abscess of the right suprarenal and kidney; right perinephric abscess; operation: drainage of perinephric abscess; fibrosis, peritoneal and pleural adhesions; fecal fistula; bilateral bronchopneumonia; hemosiderosis of the liver and the spleen.

The stomach and intestine were enormously distended and there were numerous filmy adhesions everywhere between the coils of intestine. Dense adhesions were present beneath the surgical wound and the underlying coils of intestine and a probe could be passed through the opening in the wound into the lower ileum. The intestinal wall at this site was closely

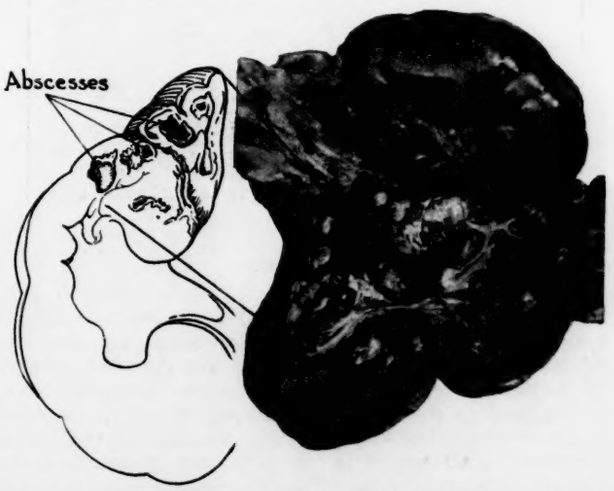


Fig. 4 (case 2).—Section through involved right kidney and suprarenal. The lower segment of the right and the entire left kidney are normal.

bound to the lateral abdominal wall by dense adhesions. Free exudate was not present. The umbilical vein was closed.

The base of the right lung was adherent to the diaphragm. Acute exudate was not present. The right lung showed incomplete separation of the upper and middle lobes both anteriorly and posteriorly. The anterior half of the lung was pale pink and well aerated, showing some lobules which were emphysematous along the anterior margin. The posterior half of

both upper and lower lobes was purplish red, showing numerous subpleural hemorrhages. It was densely consolidated. This consolidation was most extreme in the upper lobe. The left lung showed complete separation of its two lobes. The upper lobe was pale pink and well aerated. The main portion of the lower lobe was similar to the upper lobe. The posterior part of the lower lobe was purplish red and slightly firm.

The liver was purplish red and of normal size. On the lower margin of the anterior surface were scattered small white plaques evidently of organized exudate. On section the liver appeared normal.

The intestine, which was distended, contained some fluid brownish fecal material. Numerous fibrous adhesions occurred on the serosal surface. In the ileum 15 cm. above the ileocecal valve there was a fistula opening into the surgical incision on the skin. The appendix, colon and rectum were normal.

In the tissues posterior to the right kidney was a heavy fibrinopurulent exudate and a little free pus, and the organ was densely adherent to the inferior surface of the liver.

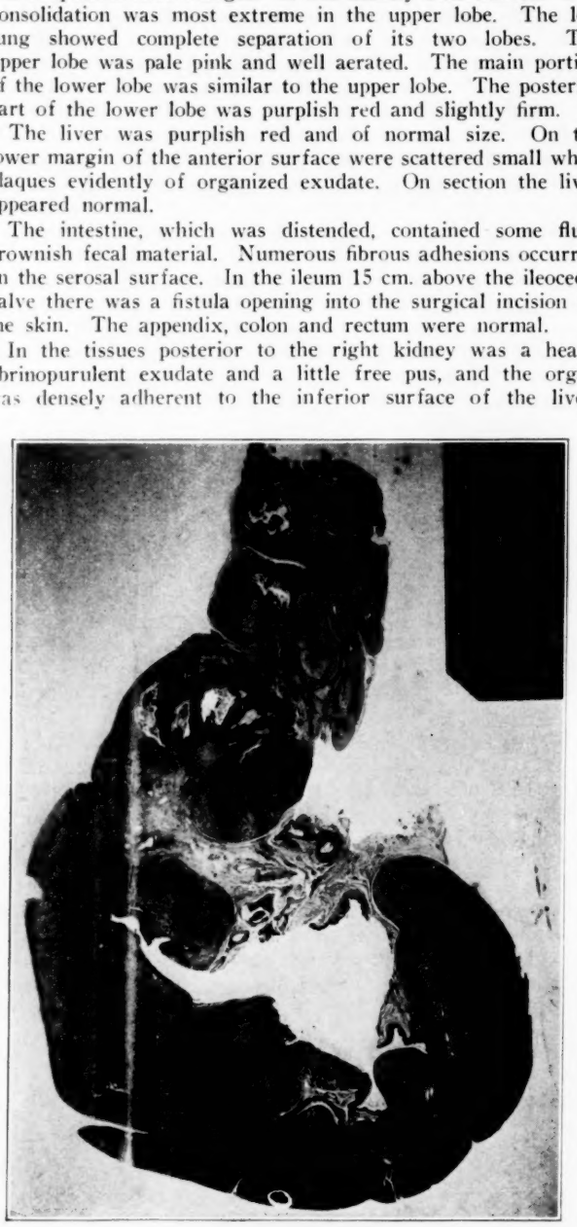


Fig. 5 (case 2).—Section of entire right kidney and suprarenal. The character of the parenchymal lesion is well shown; freedom from involvement elsewhere in the organ is noteworthy.

When the capsule was stripped away from the right kidney, a zone of fibrinopurulent exudate lay on the capsule extending outward from the pelvis of the kidney. There was also exudate on the posterior surface of the kidney. In other regions the capsule stripped readily from the kidney, leaving a surface on which the fetal lobulations were well marked. On section the kidney measured 4.5 cm. in length by 2.8 cm. in width. The upper pole appeared to be compressed beneath the right lobe of the liver. The cortex measured 2 mm. in width. In the lower half of the kidney near its medial surface was an abscess measuring about 4 mm. In the upper pole of the kidney in its medial portion were several abscesses, the largest measuring 3 mm. in diameter. These lay in both the cortex and the medulla. The pelvis was slightly dilated but was free from exudate. The right ureter appeared normal.

The right suprarenal was adherent to the medial surface of the upper pole of the right kidney. The connective tissue over it showed tiny hemorrhages. The organ was firm and rounder than normal. On section two abscesses, the largest 7 mm. in its greatest width, lay in the central portion of the suprarenal. The suprarenal measured 2 cm. in width by 1 cm. in thickness. At one point the suprarenal and kidney seemed to be in direct contact. Elsewhere the suprarenal and kidney were joined by a zone of translucent, connective tissue and there was a thin layer of pus apparently lying between the main portion of the suprarenal and the kidney.

The left kidney measured 6 cm. in length and 3 cm. in width. The capsule stripped readily, leaving a pale surface on which the fetal lobulations were deep. On section the cortex and pyramids were of normal widths. The organ appeared slightly pale and was somewhat soft. The pelvis and ureter were normal. The left suprarenal was of average size. On section it showed a pale medulla and a central zone which measured about 1 mm. in width. It was brownish red. The bladder was normal. The bodies of the vertebrae adjacent to the perinephric abscess were normal.

Specimens from the left kidney were normal.

In the upper pole of the right kidney, in the portion of the organ adjacent to the suprarenal were several large abscesses made up of poorly preserved polymorphonuclears and surrounded by large numbers of vacuolated mononuclear cells. Large circumscribed masses of mononuclear cells extended far out into the neighborhood kidney substance, replacing both tubules and glomeruli. In the surrounding interstitial tissue were lymphocytes and plasma cells, and the surrounding tubules were filled with cytoplasmic and nuclear débris and contained a few polymorphonuclears. Clumps of yellowish brown pigment were numerous. Over the region containing the abscess the capsule of the kidney was not sharply demarcated but the tissue between the kidney and the suprarenal was densely infiltrated with large vacuolated mononuclears with fewer lymphocytes and plasma cells among them, and there was a large abscess in the perirenal connective tissue. In the neighboring part of the suprarenal several large abscesses occurred. These lay mainly in the central part of the gland. About them were zones of dense hyaline tissue, infiltrated with scattered lymphocytes and plasma cells. A well marked medulla was present in the remainder of the gland, and the intermediate zone was congested and contained small hemorrhages and necrotic cortical cells. Several extracortical fetal rests were present.

The pelvis of the kidney was wide, but in the section the entire pelvic lining was not present. That which was present appeared normal and a section of the ureter was normal.

The blood vessels in the section were normal.

A gram stain of the section showed masses of gram-positive staphylococci in the abscesses. Many of the leukocytes showed phagocytosis of the bacteria.

A smear from the kidney abscess yielded Staphylococcus aureus, nonhemolytic. A culture of the blood was made from the heart's blood. A smear from the culture yielded pneumococci and B. coli. A blood plate from the culture yielded B. coli.

COMMENT

The usual course of staphylococcus metastasis to the kidney from a cutaneous infection and the development of carbuncle occurred in both of the cases reported. In case 2, the history of antecedent furunculosis was not obtained until after the operation. The subsequent clinical courses in both instances suggest that even though the patient is extremely ill and the surgical risk is great, a more extensive exploration at the initial operation is justifiable since extensive renal suppuration may exist. Certainly, continued fever and toxemia following liberal incision of a perirenal abscess indicates a thorough renal exploration.

In case 2 a most erroneous preoperative diagnosis was made. Perirenal suppuration was not seriously considered because the loin mass felt extremely hard, like a solid renal tumor. The temperature and the moderate leukocytosis were disregarded since, in children especially, they are commonly present with renal neoplasia. The pyelogram (fig. 3) suggests a tumor

and indicates a large kidney; in an adult with hypernephroma I have seen what is almost a urographic reduplication of the pelvic outlines in this infant. The pyelograms in neither case 1 nor 2 suggest renal carbuncle. The diagnostic difficulties are apparent.

While the extreme youth and the rarity of clinical recognition of renal carbuncle renders these patients and their lesions of unusual interest, the cases are recorded more particularly to emphasize that (1) infants and children are subject to grave urologic diseases; (2) the clinical picture is quite identical with that of similar lesions in adults; (3) when indications for urologic examination or radical urosurgical treatment exists, they should be liberally employed, and (4) to these procedures a tender age is no contraindication.

140 East Fifty-Fourth Street.

Clinical Notes, Suggestions and New Instruments

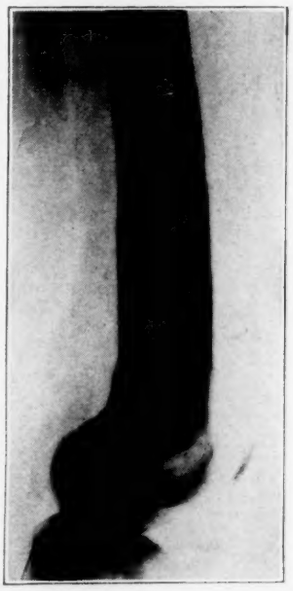
IRRADIATION OF THE PARATHYROIDS IN CYSTIC DISEASE OF THE BONES

EDWIN A. MERRITT, M.D., WASHINGTON, D. C.

Endocrinologic study has demonstrated a definite relation between the parathyroid glands and the metabolism of calcium in the skeletal body, which seems to have been first noted by Erdheim in 1903. Since then other observers, including Verbitz, Latchams, Schlagenhaufer, Gunther and Mandl, have reported cases to substantiate the direct influence of tumors and hyperplasia of the parathyroid glands in the causation of cystic bone disease as well as in less well defined bone demineralization. The case that we are reporting points to the possibility of cure of certain cystic diseases of bone by roentgen irradiation of the parathyroids, and no record of a similar case influenced by irradiation can be found in the literature.

Figs. 1 and 2 (May 16, 1931).—Large cystic areas in the distal third of the right femur; mesial cortex broken down with periosteal bone proliferation.

A white woman, aged 34, unmarried, referred to the radiologic clinic by Dr. Bullock of Washington, D. C., was admitted to Garfield Hospital by ambulance, May 16, 1931. The family history was unessential. She had had the usual diseases of childhood. She had always been well up to January, 1928, when symptoms of hyperthyroidism developed. In addition to the cardinal signs there was a loss of weight of 40 pounds (18 Kg.), insomnia, nausea and vomiting, and marked weakness. Prior to the subtotal thyroidectomy, which was performed, Aug. 14, 1928, the basal metabolic rate was plus 23 per cent. Subsequent to the operation there was a satisfactory general improvement to the point of "perfect health for a year," when nervousness returned together with all the previous symptoms of hyperthyroidism, which were thought by the patient to be "more severe than before the operation." In addition, she complained of increasing stiffness and pain in the right knee, which finally, with symptoms of hyperthyroidism, produced complete disability.



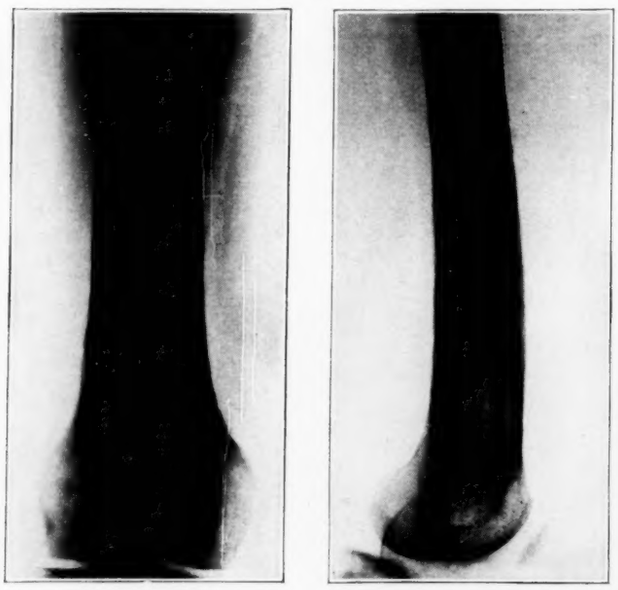
Figs. 3 and 4 (June 27, 1931).—Cystic areas in femur less conspicuous; evidence of beginning calcification.

The patient was emaciated, and was very nervous and apprehensive. The temperature was 98.6 F.; the pulse, 98; the respiration rate, 20. There was a pronounced tremor of the fingers, and slight bilateral exophthalmos. There was a scar of a previous thyroidectomy with a rather firm bilateral moderate enlargement of the thyroid above the scar. The heart and lungs were normal. The abdomen and viscera presented no demonstrable abnormality. The Wassermann reaction was negative. The basal metabolic rate was plus 35 per cent. Blood, urine and calcium determinations were not done. She weighed 95 pounds (43 Kg.). The right leg was semiflexed and could not be manipulated without producing excruciating pain in the knee joint. The knee was slightly swollen.

Roentgenograms of the right knee (figs. 1 and 2) showed cystlike areas of bone destruction involving the distal end of the femur with some periosteal proliferation. The cortex was not definitely expanded nor did it have the appearance of invasion by malignant process. The periosteal reaction might be explained by the fact that the cortex was broken through in places, resulting in egression of fluid material through the subperiosteal spaces, with resulting bone proliferation. Examination of the chest and skull showed no abnormality. Two areas of the neck, including the thyroid and parathyroid areas, were irradiated in the following dosage: 5 ma., 135 kilovolts, 10 inch distance, with 5 mm. of aluminum filter. June 6, 1931, three weeks after the first treatment, there was rather noticeable improvement in the patient's condition. There was some gain in weight, less nervousness, and a decrease in pulse rate (90). The pain in the right knee had disappeared almost entirely. Further roentgen treatment was given to the same areas with the same dosage. June 27, symptoms of hyperthyroidism showed marked improvement. Pain in the right knee had entirely disappeared. The patient was able to walk comfortably and felt very well. Roentgenograms of the right knee showed marked regeneration of bone in the cystic areas previously noted

From the Radiological Clinic of Drs. Groover, Christie and Merritt.

(figs. 3 and 4). Further roentgen treatment was administered with the same dosage to the thyroid and the parathyroids. August 8 there was still further improvement. There was a marked gain in weight; the patient now weighed 116 pounds (52.6 Kg.). The symptoms or disability were no longer noticeable in the right knee. Roentgen treatment was administered to the thyroid and the parathyroids in the same dosage.



Figs. 5 and 6 (Aug. 29, 1931).—Additional calcification of cystic areas; normal architecture of bone appearing.

August 29, the patient felt well but was slightly nervous and had a slight tremor. There were no symptoms from or discomfort in the knee. Roentgen treatment was again administered to the thyroid and the parathyroids in the same dosage. Roentgenograms of the knee (figs. 5 and 6) showed still further new bone formation in the cystic areas. September 19, the patient weighed 120 pounds (54.4 Kg.); tremor had disappeared,

Figs. 7 and 8 (Oct. 12, 1931).—Scarcely any evidence of previous cystic areas; architecture of bone nearly normal.

and she was much less nervous. One more treatment to the thyroid and the parathyroids was advised at this time. October 12, when the patient returned for roentgen examination of the knee (figs. 7 and 8), there was scarcely a trace of the original bone lesion or of hyperthyroidism.

1835 Eye Street N. W.

REMOVAL OF MASSIVE VASCULAR FIBROMA BY ELECTROCOAGULATION

A. F. TYLER, M.D., AND K. L. McSHANE, M.D., OMAHA

The bloodless removal by electrocoagulation of a large tumor, so vascular that several attempts at surgical removal had failed because of hemorrhage, indicates the value of this method.

The tumor was large. It is the only one of this size, attached to the side of the face, reported in the literature.

History.—Miss A. M., an unmarried white woman, aged 33, complained of a large tumor on the right side of the face. The patient stated that instrumental delivery at birth resulted in injury to the right eye and deformity of the right orbit. At 3 months of age, the right eye was removed on account of festering of the eyeball. At 4 years of age, the late Dr. Harold Gifford, Sr., of Omaha removed a growth from the right eyelid and counseled against any future surgery to any tumorous growth of that region. At 5 years of age, multiple painless tumors of varying size began to develop all over the body. At

Fig. 1.—Tumor from the left side. The long vertical cleft in the skin is the elongated right palpebral fissure, the margins of which opened and closed when the left eye blinked.

7 years of age, an attempt was made to remove a small tumor of the right supra-orbital region. At 15 years of age, a blood vessel in the right side of the neck was tied off and another attempt made to remove the tumor, which had gradually increased in size. The body was generally covered by soft, painless, movable tumors, pea sized to walnut sized, which caused no discomfort. However, the tumor in the right supra-orbital region slowly increased in size until it became very heavy. In March, 1931, another attempt at surgical removal was made but abandoned because of hemorrhage. The surgical wound healed, but in a short time the skin ulcerated and broke open on the lateral inferior surface and began a serosanguineous drainage. Following the operation, the tumor immediately took on a rapid growth and since the middle of August had increased tremendously in size until, November 26, it was approximately 18 inches (45 cm.) long by 10 inches (25 cm.) wide by 8 inches (20 cm.) thick.

From the Tumor Clinic of Swedish Immanuel Hospital.
Read before the Immanuel Hospital staff meeting, Jan. 8, 1932.

Examination.—The patient was emaciated; she had lost 20 pounds (9 Kg.) from the middle of August to Nov. 26, 1931. Her skin was hot and dry (temperature 102) and studded with tumors, varying in size from that of a pea to that of a small orange, all over the body, including the scalp and the soles of the feet. One tumor about 0.5 by 1.5 cm. was attached to the buccal surface of the margin of the right upper gum.

From the entire right half of the face was suspended the large tumor. On the lower third of the lateral surface was an ulcerative, draining, exuberant mass with a horizontal and medial vertical cleft, extending up under the tumor surface for about 4 inches (10 cm.), and lined by necrotic tissue, giving off an offensive odor. On the medial surface of the tumor was a vertical cleft, lined with mucous membrane, about 4 inches (10 cm.) long, located in the medial third of the tumor, which twitched with the blinking of the left eye and was apparently the distorted right palpebral fissure.

The blood count revealed: Hemoglobin, 55 per cent; red blood cells, 3,600,000; white blood cells, 34,000; polymorphonuclears,

Fig. 2.—Tumor from the right side. Projecting are the ulceration and a large denuded tumor mass. The scars in the skin above the ulcerated area are marks at previous attempts at surgical removal.

90 per cent; small lymphocytes, 7 per cent; large lymphocytes, 3 per cent. The urine was normal; the Wassermann test was negative.

The clinical diagnosis was neurofibromatosis with probable sarcomatous degeneration of the tumor on the right side of the face.

Operation and Result.—Following a preliminary hypodermic with one-sixth grain (0.011 Gm.) of morphine sulphate, "Avertin" was administered by rectum, 80 mg. per kilogram of body weight being used. This anesthetic was chosen because of the absence of fire hazard when electrocoagulation is used about the face. Aware of the size of the venous spaces which had made previous attempts at surgical removal fail, we used electrocoagulation, the current chosen being one of relatively low frequency, low voltage and high amperage. In order to increase the heat further, two pointed active electrodes were used. These were placed in contact with the tissue about 1.5 cm. apart and held in one position long enough to coagulate the tissue but not to char it. An adjacent area was then coagulated. This process was continued until the entire thickness of the skin and underlying tumor mass were coagulated across, the coagulated band being about 2.5 cm. wide. With one hand on each side of this coagulated band, gentle pressure was made so

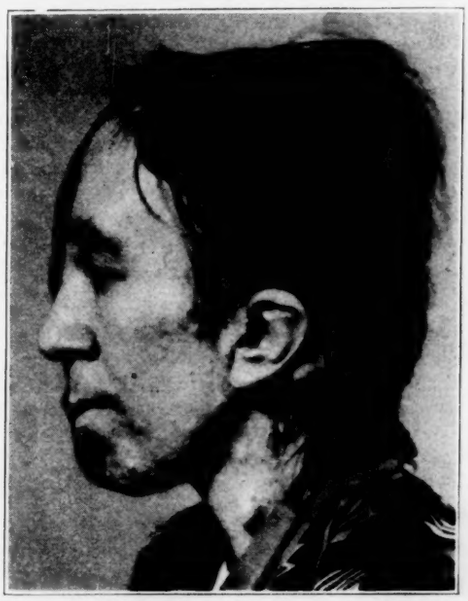


Fig. 3.—The left side of the face after removal of the tumor by electrocoagulation.

as to pull the tumor apart. The coagulated tissue easily separated. In this manner we were able to coagulate the vascular spaces and vessels before severing them, making a bloodless operation of it.

The coagulated tissue, attached to the proximal side of the wound, separated off in about one week, after which healthy granulations appeared. After the granulations were in a proper condition a plastic operation was done to close the defect as well as possible, although complete closure could not be made. The remaining defect was allowed to fill in by granulation and epidermization.

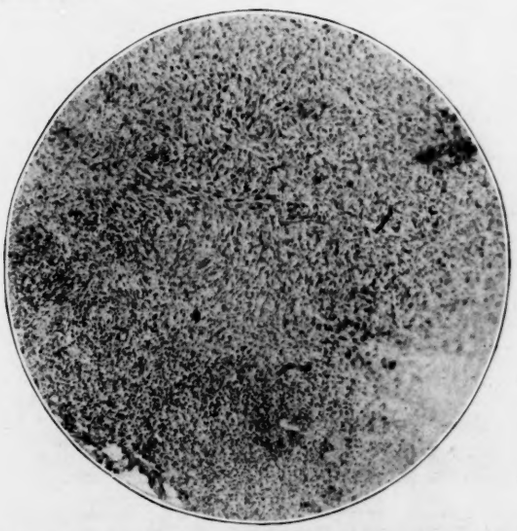


Fig. 4.—Section of tumor tissue showing the connective tissue fibers characteristic of fibroma molluscum.

The integument over the tumor was thickened to 4.5 cm. The superficial veins were about 1 cm. in diameter and the subcutaneous tissue contained large venous spaces so that hemostasis was impossible with hemostatic forceps. The technic described enabled us to coagulate this tissue, producing thrombi in the venous spaces before they were opened. The coagulated

tissue was then pulled apart without cutting and without bleeding. The tumor itself was almost devoid of blood supply, there being only an occasional artery and vein of small size. The tumor was very firm except in the central portion, where there were several abscess cavities. The largest of these measured 10 cm. in diameter and was draining out through the ulcerated area on the postero-inferior surface of the mass. Another abscess cavity measured 5 cm. in diameter and two others each 2.5 cm. in diameter.

The tumor was attached to the periosteum of the skull in the right temporal region. The thin areas in the skull bone were due to pressure atrophy of the outer table accompanied by deformity from the heavy tumor pulling downward and outward, instead of tumors in the orbit pressing outward, as we had thought before operation.

Besides the one large tumor there were numerous smaller ones in the subcutaneous tissues of the remaining flaps. On removal, these were firm, nonvascular and of the same color as cartilage.

Dr. H. E. Eggers made the microscopic observations. The material throughout consisted of connective tissue fibers, irregularly interlaced, and of a uniform stage of advanced fibroblastic development, without evidence of excessively active division. Nerve filaments could not be detected.

The microscopic diagnosis was fibroma.

This disease is often spoken of as multiple fibromatosis.

SUMMARY

It would appear that there are four general divisions of symptomatology of von Recklinghausen's disease, or fibroma molluscum:

1. Tumors of the skin.
2. Tumors of the nerves.
3. Pigmentations of the skin.
4. Functional disturbances.

1216 Medical Arts Building.

CLUBFOOT

F. C. KIDNER, M.D., DETROIT

The cure of congenital clubfoot has always presented a difficult problem. In spite of many recognized methods of treatment, unsatisfactory results are still common. Such failure results in a greater or less degree of physical handicap which is lifelong in its effects.

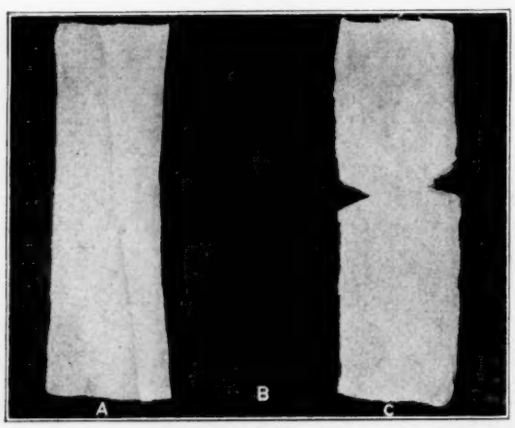


Fig. 1.—*A*, single thickness flannel next skin; *B*, felt pad for sole and heel; *C*, plaster-of-paris posterior mold cut for heel.

The three principal causes of failure are delay in the inauguration of treatment, imperfect nerve supply of the muscles, and failure to obtain complete overcorrection of the deformity. Fortunately, the first cause through education of the general practitioner is rapidly disappearing. Nowadays it is generally recognized that, the earlier treatment is undertaken, the better the chance for real cure. The second cause, as in cases of spina bifida, is and always will be a complication. Its presence offers a special problem which requires radical and long continued measures for its solution. The third cause, which is the most common, results from faults in the method of treatment used, or from lack of thoroughness in its application.

From the Orthopedic Department of the Children's Hospital of Michigan.

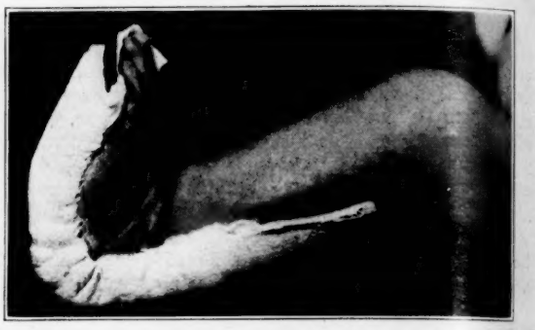


Fig. 2.—Padded posterior mold in place and hardened in corrected position.

Because it is difficult to obtain and maintain complete overcorrection to the extent of reversing the deformity by any form of treatment in common use, I am emboldened to add one more procedure to the many already recognized. It is intended for use on feet that are still sufficiently flexible to be overcorrected by manipulation. This procedure is relatively simple, is efficient, and avoids the common dangers of interference with the circulation of the foot and of pressure sores. The materials used are easy to handle and are obtainable anywhere. They are inexpensive. Plaster of paris, felt padding and flannelette are all that are required. The procedure is as follows:

Fig. 3.—Rest of leg wrapped with bias flannel bandage.

Fig. 4.—Lateral view of plaster completed.

A full overcorrection, which means correction to the point at which the dorsum of the foot can be brought in contact with

the anterior surface of the leg, is obtained by manipulation carried out, except in very young infants, under a general anesthetic. This full overcorrection is sometimes obtained at the first trial, but more frequently two or more trials are necessary.

When it has been accomplished, a posterior plaster-of-paris mold long enough to extend from a point one-half inch beyond the ends of the toes around the heel to the upper limit of the calf, and one inch wider at the lower extremity than the width of the forefoot, is made. At the heel of this mold, two V shaped cuts are made in the side of the mold to prevent wrinkling. On top of the mold is placed a thin felt pad also cut to fit the heel. On top of this a soft layer of flannelette is placed. While still soft, this mold is bandaged to the sole of the foot and back of

Fig. 5.—Anterior view of plaster completed, showing entire absence of pressure over anterior surface of foot and ankle with strong overcorrection. Also shelf on posterior plaster mold which prevents varus of the forefoot.

the calf with the flannelette layer in contact with the skin. During the process of hardening, the surgeon holds the foot in full overcorrection of the plantar flexion of the foot and of the adduction of the forefoot, care being taken to prevent squeezing of the toes together. As the mold has been cut wider than the sole of the foot, its turned up medial edge acts as a shelf against the inner side of the big toe to maintain the correction of the forefoot adduction. When the mold is hardened, it alone serves to maintain the correction. In order to hold the mold in

Fig. 6.—Amount of overcorrection easily maintained.

place, the whole lower leg and thigh are bandaged with flannelette and then enclosed in circular plaster of paris with the knee at right angles. This circular plaster is carried around the sole of the foot without enclosing the front of the ankle. When the dressing is complete the whole dorsum of the foot and the front of the ankle are visible, so that there is no possibility of pressure in these regions. Thus the only obstruction to circulation is the fat and skin of the patient's foot where it wrinkles over the dorsum.

The advantages of this method are that it allows constant inspection and avoids all possibility of external pressure. The illustrations are self explanatory.

1337 David Whitney Building.

FRACTURE OF THE ELBOW

JAMES WARREN SEVER, M.D., BOSTON, AND H. QUIMBY GALLUPE, M.D., WALTHAM, MASS.

This case is reported for two reasons: first, because of its excellent functional and anatomic result, in spite of totally unorthodox treatment, and, second, because of its exemplification of Wolff's law, or the law of "bone transformation."

Wolff's law is as follows: Every change in the form and function of the bones, or of their function alone, is followed by certain definite changes in their internal architecture, and equally definite secondary alterations of their external conformation, in accordance with mathematical laws.

One of the corollaries of Wolff's law is that of "functional shape." The external force and internal architecture are determined by function alone.

Fig. 1.—June, 1928; note backward displacement of lower end of humerus.

REPORT OF CASE

J. M. C., a boy, aged 8 years, fell, June 10, 1928, and fractured his right elbow. A roentgenogram showed a supracondylar fracture which was at once reduced perfectly, but swelling and loss of radial pulse necessitated change of position of the elbow, and consequent loss of reduction of the fragments. This was necessary to preserve the hand and lower arm. As a result of the swelling, the skin in the bend of the elbow gave way, and there resulted for some time an open wound exposing the muscles but not communicating with the joint itself.

Fig. 2.—June 31, 1928: note new bone; displacement of lower fragment uncorrected.

We saw the child in consultation about a week later. An attempt was made at that time to reduce the fracture, but on account of the continued swelling and the open wound it was abandoned. An internal angular splint was applied and advice was given to leave the elbow as it was until the wound had healed and the swelling subsided. A roentgenogram taken the day of the accident shows the condition of the fracture, with the backward displacement of the lower fragment. There was also considerable lateral displacement (fig. 1).

The swelling disappeared and the skin healed. A roentgenogram, taken June 31, still showed considerable backward and lateral displacement of the lower fragment. There was a definite bridge of new bone uniting the fragment to the back of the shaft of the humerus (fig. 2).

The splint was omitted as soon as the wound had healed, and the elbow was held as fully flexed as possible for about three weeks, following which freedom was advised. The child

Fig. 3.—September, 1928: solid union; beginning absorption of proximal end of humerus.

also submitted to physical therapy three times a week for several months, but no forcible passive motions were made.

In September, 1928, a tracing showed 55 degrees flexion and 120 degrees extension (fig. 3). The roentgenogram at this time showed solid union of the two fragments. There was marked absorption of the distal end of the proximal fragment, and the lateral displacement was becoming much less marked. These changes were due, we believe, to functional use alone.

Fig. 4.—September, 1931: three years after fracture; normal function and motion; almost complete absorption of lower end of humerus.

The child then stopped treatment and was not seen again until January, 1931, at which time he had perfect motion and function, and no deformity.

He was seen again, Sept. 30, 1931; the result was perfect, anatomically and functionally. He was 10 years of age and in this period of two and a half years had developed through bone transformation and functional use a practically normal arm.

COMMENT

This case represents not a standard nor even a generally accepted method of treatment but represents the best judgment of two surgeons in an attempt to prevent the development of an almost certain Volkmann's ischemic paralysis.

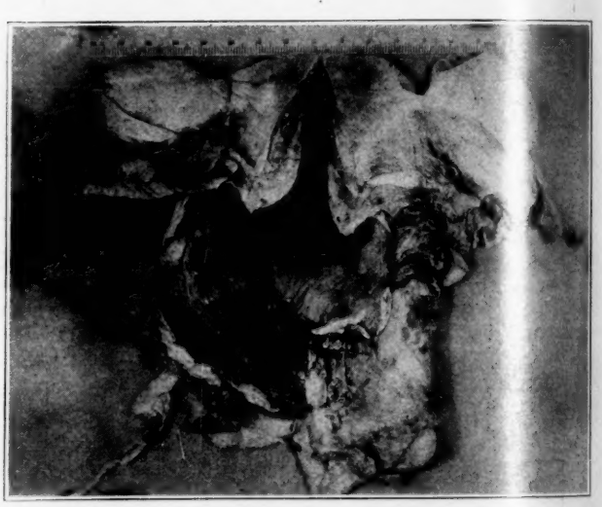
In the prevention of it there was a successful outcome; we were not so sure as to the fracture. Time, however, proved that growth and function could do great things. Throughout the conduct of this case, we had the hearty and interested cooperation of the parents, and they were at all times prepared to have the child operated on, but at each visit we delayed until the "next time." The end-result justified the means.

321 Dartmouth Street.

THE CERVICAL PESSARY—A MENACE TO HEALTH AND LIFE

HAROLD O. JONES, M.D., CHICAGO

The widespread use of different types of cervical pessaries, presumably for therapeutic purposes but in reality for contraception, prompts this report. Physicians are led to believe that these instruments are beneficial to patients suffering with dysmenorrhea, or at least that they are harmless. Both assumptions are false. Within the last few years more than a dozen patients have been seen in the gynecologic service at St. Luke's



Pessary in place.

Hospital with severe pelvic peritonitis and cellulitis due to infections originating about these pessaries. The following is an illustrative case history:

Mrs. M. R. entered St. Luke's Hospital in the service of Drs. Harry E. Mock and N. C. Gilbert too ill to permit either a complete history or a satisfactory examination. The clinical diagnosis was miliary tuberculosis.

Four months prior to admission, a cervical stem pessary had been inserted. Less than forty hours after admission, the patient died. Postmortem examination revealed a yellow metal pessary in the uterus; acute ulcerative endocarditis and ulcerative endocervicitis; thrombo-ulcerative endocarditis of the right auricle and the thebesian valve; mural thrombo-ulcerative endocarditis of the left ventricle; local fatty changes of the myocardium, and changes such as are usually seen with septicemia.

Cultures of the blood from the heart and from the uterus yielded Streptococcus hemolyticus.

The accompanying illustration shows the pessary in place.

104 South Michigan Avenue.

Psychology.—It is an astonishing fact that in most countries medical courses boast no classes in psychology. Though no one seriously disputes the need of knowledge of psychology, the student is left to his own devices to secure such understanding, when, how and as he may.—Sigerist, H.: Man and Medicine, New York, W. W. Norton & Co., Inc., 1932.

Special Article

THE RELATIONSHIP OF THE PRIVATE MEDICAL PRACTITIONER TO PREVENTIVE MEDICINE

SIR ARTHUR NEWSHOLME, M.D., F.R.C.P., K.C.B.
BIRMINGHAM, ENGLAND

My duty here is to outline briefly developments and changes during recent decades, in Europe generally and particularly in Britain, in preventive as related to clinical medicine, and the influence of this altered orientation on the work of the private medical practitioner.

I may claim some advantage in discussing this subject; for not only did I engage in general medical practice during several years of my earlier professional life, but also for over thirty-five years I held responsible positions in public health work in England; and more recently I have during several years had opportunities to observe forward movements in America, and for the last three years have been completely occupied in a special study of the problem throughout Europe.[1]

My simplest plan would be merely to outline the main movements in Europe, leaving the reader—as I must in the end—to determine how far and in what respects, if any, European experience may be applicable to the circumstances of American life. To give this outline is my main task; but my sketch of European developments will, I am convinced, be more useful if prefaced by a few postulates, most of which will command unalloyed approval. These postulates, if accepted, will help in the judicial weighing and measuring of European developments. I am not without hope that some, at least, of these postulates will be considered worthy to rank as axioms.

My first postulate is that

> 1. Neither instructed public opinion nor the medical conscience, which in this connection is the advance-guard of Christian civilization, can tolerate the continuance of neglected sickness.

Several corollaries, or interdependent postulates, follow from this first postulate:

> 2. Medical care in its widest sense must be made available for all, as an important element in securing maximum efficiency and happiness in a civilized community.

Neglect to provide medical care for every member of the community being repulsive to the medical even more than to the public conscience, it follows that

> 3. Gaps and imperfections in present medical services must be made good and medical care must be of a quality which does not lack in any essential respect all that is necessary for expeditious recovery or for comfort, if recovery is unattainable.

It will be agreed that there can be no difference of opinion as to the preceding postulates. Controversy arises only when plans and methods are discussed, which necessarily are governed by financial as well as by medical considerations.

It is unnecessary for me to argue the truth of the further postulate that

> 4. Health is worth whatever expenditure is efficiently incurred in its maintenance or to secure its return.

I will therefore proceed at once to the postulate that

> 5. In present circumstances, both in America and in Europe, adequate scientific medical service has become unattainable by isolated or family effort standing alone, for a high proportion of the total population.

The evidence in favor of this statement is given in "Medicine and the State"; its truth is beyond dispute.

In passing, it is well to remember that there is a corresponding dependence on extrafamilial aid in our own training for the medical profession. In Britain, and I assume also in America, a large share of the cost of medical education is borne by state endowments or by gifts and endowments from the beneficent rich. It may be said, then, that neither doctors nor their patients are completely independent of communal financial aid, supplementing family resources.

The last postulate leads to the next:

> 6. For a large portion of the total sick population measures must be, and in part are already, organized to assist in providing necessary medical services, the sources available being private charity, communal taxation, and provident insurance for future needs.

In Europe these three sources, or two of them, are often seen in combination.

The need for special medical services (laboratory, physical diagnosis, specialist clinical departments) is an outstanding feature of modern medicine. While we welcome these aids to good work—for the rapid development of which general medical practitioners, in their wish to do the utmost for their patients, are largely responsible—I desire to add a further postulate as follows:

> 7. There is need to organize such cooperative work as will secure that specialism, which necessarily is concerned mainly with the disease, is not allowed to submerge the wider and wiser outlook of the general practitioner who is concerned with the patient himself.

Modern medicine calls for a further postulate, demanding a wider investigation of his patient than the private practitioner and specialist often give:

> 8. There is often needed a study of the patient from a psychic, social, economic and occupational standpoint, if his illness is to be accurately diagnosed and satisfactorily treated.

In view of this desideratum it is not surprising that social agencies and public authorities have taken a hand in medicine; and here again, as in the parallel case of experts and private practitioners, we still need to discover and to apply the best concerted methods of social team work.

1. The results of this investigation are given in my "International Studies on the Relation Between the Private and the Official Practice of Medicine": vol. I. Netherlands, Denmark, Sweden, Norway, Germany, Austria; vol. II. Belgium, France, Italy, Jugoslavia, Hungary, Poland, Czechoslovakia; vol. III. Great Britain and Ireland; and a more general statement in "Medicine and the State," Baltimore, Williams & Wilkins Company, 1932.

One further postulate is now generally accepted:

9. Modern medicine is becoming increasingly physiological and decreasingly pathological

—an effort on the part of the physician to aid in securing and maintaining maximum psychophysical efficiency, not merely or only efforts to regain it when damaged or lost. This change necessitates the searching out of early departures from health, and the giving of counsel in health which if adopted will diminish or prevent their occurrence.

At this point an almost parenthetical remark may be made on periodic medical examinations, the advocacy of which has become an accepted policy of the medical profession. In my view these examinations should usually form part of a medical overhaul of every member of a family by the family doctor, the findings to be reviewed at intervals. I have never disguised my opinion that periodic examinations of men, say between 40 and 60—though the advice based on such examinations is useful and may retard illness—are too late as regards the most serious causes of breakdown in this middle period of life, and that the earlier family care predicated above has an immensely wider scope of preventive potentiality. It is at earlier ages that the chief sources of permanent middle-life breakdown originate. In childhood and youth occur the septic diseases and acute infections, including acute rheumatism, which produce cardiac and other disablements in middle life; at the same period of life or in early adult life tuberculosis causes a serious though decreasing drain on life; while the syphilitic virus, usually inoculated in early adult life, produces its results in arterial degeneration, premature old age and insanity perhaps some twenty years later.

These three greatest sources of permanent disablement and death during the working years of life can best be obviated by the application of clinical and social medicine during childhood, youth and adolescence. But, let me add, I do not doubt that later medical overhauls have some preventive value, and a greater value in staying the progress of disease already present.

PUBLIC AUTHORITIES AND MEDICINE

With the preceding postulates in mind, let us next glance at European developments in the relationship between the public and the private practice of medicine. Public authorities for long have busied themselves with the medical care of the sick poor (and of maternity) both domiciliary and in hospitals. In other directions their incursions into medicine have been more recent and have been activated chiefly by the growth of preventive medicine and public health.

Medical Aid for the Poor.—In all European countries there is some provision of medical aid for the necessitous, including help in childbirth. It may take the form of a special medical officer in every district for this work, as in Britain and the Scandinavian countries; or, as in France, every doctor may undertake this work according to a fixed schedule of fees. The French system is being advocated in Britain by the British Medical Association. This medical service for the poor includes also institutional medical treatment, now greatly improved in quality in Britain. In Ireland, in many, especially in rural, districts, half the population receive gratuitous medical service; and it may be said that Ireland approaches nearest of all countries known to me to a state medical service, the cost of which falls on general taxation. Its medical officers are not precluded from private practice.

In Scotland there is a special state service for its Highlands and Islands, in which, otherwise, medical aid would be lacking. The government guarantees the salaries of doctors in supplementation of fees paid by patients, and gives mileage allowances for traveling. Local needs in this important development have impelled governmental action at the expense of the national taxpayer. Is not such action indicated in certain mountainous parts of the Southern states in America, especially for midwifery and for that terrible disease trachoma? Not even the most rigid opponent of state intervention can doubt its necessity in areas where otherwise our three first postulates cannot be met.

This is the case of utmost need; but, short of this, nearly every private medical practitioner, especially in rural districts, day by day is himself a vicarious substitute for the state, for he gives medical aid gratuitously—as every member of the medical fraternity in conscience must—when need arises. He resembles the tax gatherer—except that much medical work is gratuitous—in that he charges his patients not according to their needs but according to their means; and as in the case of taxation it is payments by the well-to-do which enable him to attend his poorer patients gratuitously or at a charge which does not cover expenses. Thus the private doctor, the tax gatherer and the medical official alike are state servants, but the state service of the first of these is unacknowledged.

Hospital Provision for the Poor.—Hospitals in the first instance were an output of Christian charity, their full medical utility developing very slowly. In nearly every country hospitals are now the chief centers of medical work and of the research in medicine which is indispensable for progress. In Britain, voluntary hospitals, provided by the gifts and bequests of the charitable, still hold their premier position. But in recent decades public authorities in every country have been active in providing hospitals, and in continental Europe the hospitals of these authorities have almost completely replaced voluntary hospitals. In Britain, voluntary hospitals have held their ground, but they have not met the rapidly increasing needs of the public, and now official hospital beds—even when the beds in mental hospitals are excluded—largely exceed in number the beds in voluntary hospitals.

Private practitioners, as they will agree, are largely responsible for this great increase of treatment in hospitals, through their scrupulous desire to secure for their patients the full advantage of special skill in medicine and surgery.

In continental countries, payments are exacted from hospital patients according to their means, the payments for insured patients being made in part by the insurance societies to which the patients belong. In England very rapidly there is growing up a voluntary system of partial insurance for hospital treatment, independent of the compulsory national sickness insurance scheme, for about a third of the total population. For a weekly payment of perhaps three pence, employers sometimes contributing an equal amount, families are partially insured for consultative services and when necessary for treatment in hospitals. In some towns, half the cost of maintenance of voluntary hospitals is now derived from this and allied sources.[2]

2. See page 95 of my "Medicine and the State" for details.

Evidently such a system lends itself to increasing abstractions from private medical practice; and although the majority of these patients would be sent to a hospital by the medical practitioner treating them, there are others who should remain under his care. This needs to be more strictly regulated. In countries in which national sickness insurance schemes are in operation (Germany and Austria, Hungary, Poland) there has occurred an immense development of hospital and polyclinic (ambulatorium) work which greatly needs to be coordinated and regulated, owing to its independence of the work of the general practitioner.

Outside Britain, national insurance schemes include some hospital treatment, but continental insurance organization can seldom pay more than half the cost, and in all countries hospital charges are paid largely, sometimes completely, by general taxation. The arrangements in Britain have already been indicated.

The foregoing is a brief outline of the position reached in what, for lack of a better term, I must call socialization [3] of the medical services, domiciliary and institutional, for the absolutely necessitous, the poor, and for that large part of the total population who are not far above the poverty line.

Is clinical medicine preventive medicine? At this stage the criticism will suggest itself that my remarks do not relate to preventive medicine. But if, as I claim, medicine is preventive when it curtails illness, when it decreases suffering, when by treatment (e. g., of an operation for cancer, or the radical cure of hernia or varicose veins) it restores a patient to the rank of self-supporting citizens, or when, for instance, in the scientifically regulated administration of insulin, it gives many added years of useful life, then surely clinical medicine is preventive medicine in a real sense.

If this be admitted, then we must regard all efficient clinical medicine as also an important branch of preventive medicine. But we are especially concerned with new developments of clinical medicine having direct and obvious bearing on public health, and to these we must now direct our attention.

1. *Free Hospitals for Infectious Diseases.*—In its earlier development, public health was fairly distinct from clinical medicine in most particulars, but never completely so; for even in the course of the earlier dramatic triumphs won by sanitation, the necessity arose also of treating cholera patients and of treating and segregating cases of "fever" and smallpox. Now in nearly every country some hospital provision for the chief infectious diseases is provided gratuitously. Thus, for the isolation and treatment of the infectious sick the socialization of medicine has become almost complete.

2. *Free Immunization.*—A step beyond this has been taken. Public medical vaccinators are provided in most countries for gratuitous vaccination against smallpox. In rural districts in Norway, specially trained midwives do some of this work.

More recently a large amount of immunization against diphtheria has been done at the public expense, especially in America. In America this may be done also by private practitioners to whom public authorities supply the necessary toxoid-antitoxin at the public expense, and whose officers may give demonstrations of the method to be employed. My own view is that, subject to strict regulations as to methods,[4] private practitioners should be entrusted with this work for both smallpox and diphtheria, and paid for it by public authorities at a fixed charge irrespective of the social position of patients. Under such a system we should, I think, secure a much more widely protected population than at present.

3. *Free Ancillary Services.*—The provision by public authorities of ancillary aids to diagnosis is another development of socialized medicine of great importance. In the initiation of laboratory facilities for the diagnosis of diphtheria and tuberculosis, American pioneers, Biggs, Prudden and Park, have led the way.

The extensions of such work, including sometimes free examination of tumor specimens and of blood counts, and on the physical side x-ray photographs in tuberculosis, are well known. In every country these state-paid arrangements exist more or less fully developed. Here, then, is a further instance of the socialization of a branch of medicine, which, although it belongs to clinical medicine, is equally important in preventive medicine. One cannot easily exaggerate the value of the aid thus given not only to the doctor and his patient but also to preventive medicine, when adequately utilized by the medical practitioner in his daily work.

But public health authorities have not confined their activities to communicable diseases.

4. *Treatment of Non-infectious Diseases.*—I have already claimed clinical medicine as a branch of preventive medicine, in a large part of its activities. Let me take as a further example that of the institutional treatment of cripples. Local authorities in Britain on a large scale now treat institutionally cases of hip disease, extreme rickets, or the deformities following poliomyelitis, and thus, partially or entirely at the public expense, restore many children to useful life.

5. *The Care of Maternity.*—To a very exceptional extent—though in continental Europe a vast amount of public aid is given in maternity—the care of maternity has become in England a subject of wide action by public authorities. Midwives, who attend 60 per cent of total confinements, are strictly supervised and regulated by these authorities. They are obliged to call in medical aid in emergencies. The doctor called in is chosen by the patient, and the local authority is legally required to pay the doctor's fee on a fixed scale. The local authority recovers this fee from the patient or her husband, or part of it, when possible. Local authorities also provide lying-in hospitals for poorer women, treatment in which is given at low charges, sometimes remitted. They also provide antenatal consultation centers, the relation of which to the work of general practitioners is not yet thoroughly adjusted.

Returning to communicable diseases, tuberculosis and venereal diseases are two of the chief scourges of mankind, accounting probably for a fifth part of total deaths from all causes; and it is to combat these diseases that public authorities have entered most extensively into clinical medicine as an agent of public health.

6. *Control of Tuberculosis.*—Work for the control of tuberculosis in Europe is like that in America. Free bacteriologic examination of sputum is provided, still too often neglected by some private practitioners. Then the reporting or notification of cases of tuberculosis is

3. The word "socialization" is employed here to denote medical service given at the expense of the state (through taxation) or of a voluntary organization (through gifts), the patient not paying except so far as he may have been a taxpayer or a donor to the voluntary charity. If he pays in part, to this extent his position is changed.

4. Strict regulations are called for to insure uniformly efficient work and to minimize the appreciable risks of septic complications.

required as soon as the practitioner has made his diagnosis; and here also one must bemoan that the fulfilment of this duty is often neglected and oftener seriously delayed.

The general measures taken are well known, and I need not particularize except to say that in all European countries the institutional treatment of tuberculosis is undertaken by public authorities, chiefly at the expense of the taxpayer. In continental Europe much of this cost is borne by sickness insurance funds, but in Britain it falls entirely on the public authorities. The position is accepted and acceptable to most practitioners. The fact that one third of the total population of Britain is insured under the national insurance scheme, and that the treatment by public authorities lifts some burden from the practitioner's shoulder, without implying any reduction of his per capita payments, is a factor in the position.

7. *The Treatment of Venereal Diseases.*—In most European countries, some treatment of venereal diseases is undertaken at the public expense. In several European countries (Austria, Italy, Denmark, Sweden and Britain), gratuitous treatment is undertaken by public authorities without restrictions. In Belgium, free medicaments are supplied to doctors, and great stress is laid on securing the cooperation of private practitioners. In Britain, private doctors have come to regard these diseases as needing specialist treatment, and I have often been informed by them that they thankfully pass on their cases of these diseases to the clinics of the public authority. A minority of doctors continue to treat their own patients, and arsphenamine is supplied free to these doctors.

The position in Britain has become one of almost complete socialization of the treatment of venereal diseases at the expense of the public purse. Clinics (usually attached to voluntary hospitals, that is, hospitals not supported by taxation) are provided in all considerable centers of population; and patients are treated at these (in hospital beds when necessary) gratuitously without any residential restriction and with entire disregard of financial position. Pathologic examinations (for gonococci and Wassermann tests) are also undertaken gratuitously for all practitioners.

A tribute must be paid to the attitude of the British Medical Association in this matter, as representing the mass of medical opinion. When the report of the Royal Commission on Venereal Diseases was published in 1916, and the government promptly made its national proposals, these were sent in draft to the council of the association; and in its reply the association, while realizing that they embodied "a new departure of a most important kind," resolved in general approval of these proposals that

> measures for the best modern treatment of venereal diseases should be readily available for the whole community, and that arrangements made should be such that persons affected by these diseases will have no hesitation in taking advantage of the facilities for treatment that are afforded.

It further resolved that

> the treatment at any institution included in a local authority's scheme should be free for all. There should be no refusal to treat a patient who is unwilling to go to his own doctor.

In its report on this subject, the council of the association made the following comment, subsequently endorsed by the representative meeting of the association.

> The policy of the association in connection with treatment at hospitals has always been that persons who are able to pay for their own treatment should not be treated at charitable institutions except in emergency, but should be referred to a private practitioner. In endorsing the recommendation of the Royal Commission the Council recognizes the exceptional nature of venereal disease; the reluctance of patients affected by them to go to their private medical attendant; the risk that they may go to unqualified persons for treatment with disastrous results to themselves and to others; and the importance to the community of adopting all possible measures for inducing sufferers from venereal disease to seek early and adequate treatment. On these grounds the Council is of opinion that the recommendations of the Royal Commission should be accepted and approved by the association.

As I was a member of the royal commission whose recommendations were thus endorsed, and as I was officially responsible for formulating and organizing the measures to give them effect, it is pleasant once more now to testify to the public-spirited action of the general medical profession in Britain as voiced by their association. At the present time unrestricted gratuitous venereal disease clinics are available everywhere, and the reduction in the amount of one of our chief social cankers has justified the action of the government and the medical profession's endorsement of this action.

8. *The Searching out of Disease.*—Public authorities have not been contented with sharing in the cost of treatment of a certain number of diseases at the expense of the communal purse. In recent decades a most striking development has occurred, as the result of increasing realization that delayed treatment of the sick implies a lowered prospect of recovery and protraction of inability to work; and more and more it is being realized that the ideal for the medical practitioner is not merely to treat patients who apply to him but to enter into an arrangement with the families entrusted to his care, which will enable him, without suspicion as to his conduct being altruistic, to strive to discover disease hitherto undetected and to prevent its continuance. This means an important development in preventive medicine. Payment according to the number of "medical acts" has discouraged development in this important direction; and until the circumstances of family remuneration are altered, most practitioners in all countries remain relatively helpless except for their insured patients. Meanwhile several of the postulates already stated are being partially neglected; and until or unless this neglect ceases, we cannot as private practitioners of medicine complain if public authorities "get busy." As a medical confraternity it is our business to make public activities at least partially superfluous.

9. *School Medical Service.*—This point is best illustrated in the findings of school medical inspectors. Without detailing the important work under this heading in many European countries, it may be said that in all of them some official treatment of defects and diseases found in school children is being effected, though, as a rule, parents are encouraged in the first instance to employ their own doctors. We cannot reasonably object, either, to the inspection or the medical treatment of school children at school clinics, unless as private practitioners we are able to organize arrangements which are equally good and complete for every child attending school whose parents are able and willing to pay. Even then children will remain for whom public treatment must be provided.

In continental Europe the amount of medical work needing to be done by educational authorities is less

than that in Britain, because in the former dependents come within the scope of the treatment given under national sickness insurance schemes. In Britain also—except for the minor conditions for which parents seldom have a doctor—the treatment undertaken in school clinics is chiefly specialist in character (e. g., ringworm, ophthalmic tests, treatment of adenoids and deformities, dental treatment) and for most pupils this specialist treatment must be carried out either at hospitals or in special school clinics. It should be added that the morbid conditions found by school medical inspectors commonly are the late results of long-established disease (otorrhea, advanced dental caries, deformities) or of malnutrition; but although these ought often to have been discovered some years earlier, their neglect would, but for the school service, have been still further prolonged.

We have, then, in the medical inspection of schools and the resultant action a further instance of socialization of medicine, having as its object the discovery and treatment of neglected illness. It is a form of socialized medicine which might, to a very considerable extent, be replaced by cooperative team work by private medical practitioners. It is socially desirable that they should in fact arrange to take up this much neglected work and thus secure the fulfilment of the postulates already stated, either alone or with supplementary aid from public agencies.

10. *Treatment to Anticipate Disease.*—We come last to the greatest advance made in medicine, an advance shared in varying proportions between public authorities and the most far-seeing of private medical practitioners. This consists in action which, constituting, as it does, anticipatory treatment, prevents the occurrence of illness and defects. In this direction lie the chief future triumphs of medicine, and it is for private practitioners themselves to determine whether this work shall remain largely the domain of public authorities and social organizations or whether private practitioners shall carry out this work for every family in their care. To do this work, general practitioners will need to pool some of their activities, to employ jointly not only sick-bed nurses but also public health nurses (health visitors) to undertake much quasi-medical work, which is too costly when done by doctors and cannot be expected from them, though they should guide and direct it. On these lines, rickets will soon disappear; more favorable growth and development will be promoted, and the general standard of health will be raised through improved nutrition and general hygiene. The promotion of the psychic health of children forms an important part of a complete program in this direction, which the medical practitioner must recognize, even though his share in this work is chiefly indirect.

Meanwhile in every European country public authorities and voluntary agencies are busy with this most important of preventive work; while private practitioners who might be in charge of much of it, singly and cooperatively, have little concern with it, under present conditions of medical practice. The program here indicated cannot wait; hygienists and their organizations will not wait; educated public opinion will not wait; cannot we hope that private practitioners will make it a chief part of their future work?

11. *Insurance Treatment.*—In the preceding very rudimentary outline of my subject, I have only incidentally mentioned the great sickness insurance systems which are now established in most European countries. They have not hitherto conduced much to preventive medicine, except so far as treatment of disease tends to prevent its prolongation, to reduce its severity or to prevent its recurrence. I do not doubt that under highly satisfactory organization the medical care in sickness insurance can be made valuable as an instrument of preventive medicine; though this will be difficult. The difficulty in securing this end is undoubtedly increased by the fact that monetary benefits depend on medical certification; for a scheme of insurance for domiciliary medical care without money benefits during disablement has not, so far as I know, been adopted on a very large scale in any country. Even with the handicap constituted by combining insurance for medical and for monetary benefits, the cause of preventive medicine can be satisfactorily served if we secure almost superhuman competence in the management of the insurance scheme, and that the scheme furthermore is adhered to by every insured person and every doctor with almost superhuman loyalty and integrity.

I have already indicated my view that for a large section of the population a complete medical service necessitates contributions from the persons benefited on an insurance plan, and that even then some aid from the state is necessary. The only practical alternative consists in vast extensions of state service without insurance.

Under an insurance service, hospital and consultative services can be brought within the reach of all; and doctors by pooled effort can similarly supply a domiciliary service which will be satisfactory both to them and to their patients. Additional communal help would be needed for the poor.

I agree that money benefits during disabling sickness are a great boon, even though the medical problem is much more difficult when combined with the financial problem. The lot of the doctor who has to hand out certificates which authorize money allowances is not altogether happy, and the withholding of such certificates is often an obnoxious task. But it may need to be faced, especially so if—and this appears to me to be the position throughout Europe—the practical alternative is a medical system in which doctors would be, and their patients would be paid for, in the same way as are our state school teachers and the pupils under their charge in our system of national free elementary education.

But even the defects of existent sickness insurance systems should not loom too large in our minds. Furthermore, defects in other branches of public medicine and in private practice alike only partially obscure the great advances and improvement both in private and in public medicine of the last thirty years. Ignorance will continue, though it will grow less; the immeasurably more serious defects of character will also continue, in connection both with public and with private medicine; but they will, I am confident, decrease, and we can look forward to a higher standard of medical work and a more complete utilization of the invaluable aid which medicine practised in a cooperative spirit can give to humanity. But vigilance and altruistic effort will always be needed on whatever detailed lines increased utilization of medical skill develops and extends.

Does the road wind uphill all the way?
Yes, to the very end, my friend.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

CHAPPEL LIVER EXTRACT (SUBCUTANEOUS).—A sterile aqueous solution, containing the nitrogenous, nonprotein fraction G of Cohn et al. obtained from fresh mammalian liver, preserved with cresol 0.4 per cent. Each cubic centimeter contains the active material extracted from 10 Gm. of liver.

Actions and Uses.—Chappel liver extract (subcutaneous) is proposed for subcutaneous or intramuscular injection in the treatment of pernicious anemia.

Dosage.—Two cc. daily; the maintenance dose is 2 cc. daily at intervals of from ten to twenty days.

Manufactured by Chappel Bros., Inc., Rockford, Ill. No U. S. patent or trademark.

Ampoules Chappel Liver Extract (Subcutaneous) 2.5 cc.: Each cubic centimeter contains the active material extracted from 10 Gm. of liver.

To prepare Chappel liver extract (subcutaneous), finely ground equine livers are extracted several times with water. After precipitation of the proteins by heat, the liquid is concentrated in vacuo at low temperature, alcohol added to bring the alcoholic strength to 70 per cent, the precipitate filtered out, and the filtrate again evaporated. Sufficient absolute alcohol is then added to bring the alcoholic strength of the liquid up to 95 per cent. The precipitate is then dissolved in water and the reaction of the solution adjusted to *p*H 7.2. Each cubic centimeter of the finished product represents the active material from 10 Gm. of liver. Cresol 0.4 per cent is added as preservative and the solution is then filtered.

ALLERGENIC EXTRACTS-LEDERLE.—Liquids obtained by extracting the protein of substances believed to be the cause of specific sensitization.

Actions and Uses.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1931, p. 24.

Dosage.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1931, p. 24.

Allergenic Extracts-Lederle are marketed in 6 cc. vials.

Manufactured by the Lederle Laboratories, Inc., Pearl River, N. Y. No U. S. patent or trademark.

Undiluted and 1:10 Dilution: *Banana Allergenic Extract-Lederle,*[5] *Beef Allergenic Extract-Lederle,*[5] *Chicken Meat Allergenic Extract-Lederle,*[5] *Codfish Allergenic Extract-Lederle,*[5] *Cornmeal Allergenic Extract-Lederle,*[2] *Crabmeat Allergenic Extract-Lederle,*[2] *Green Pea Allergenic Extract-Lederle,*[2] *Horse Serum Allergenic Extract-Lederle,*[6] *Lamb Allergenic Extract-Lederle,*[3] *Lima Bean Allergenic Extract-Lederle,*[2] *Milk Allergenic Extract-Lederle,*[6] *Orange Allergenic Extract-Lederle,*[5] *Pork Allergenic Extract-Lederle,*[3] *Pyrethrum Allergenic Extract-Lederle,*[7] *Rice Allergenic Extract-Lederle,*[2] *Rye Allergenic Extract-Lederle,*[2] *Spinach Allergenic Extract-Lederle,*[5] *Tobacco Allergenic Extract-Lederle,*[7] *Wheat Allergenic Extract-Lederle,*[2] *White Potato Allergenic Extract-Lederle.*[5] Undiluted, 1:10 dilution, and 1:100 dilution: *Horse Serum Allergenic Extract-Lederle,*[6] 0.5 mg. of nitrogen per cc. and 0.05 mg. of nitrogen per cc.: *Chocolate Allergenic Extract-Lederle.*[8] 0.2 mg. of nitrogen per cc. and 0.1 mg. of nitrogen per cc.: *Sheep Dander Allergenic Extract-Lederle.*[4] 0.2, 0.1, 0.01, and 0.001 mg. of nitrogen per cc.: *Horse Dander Allergenic Extract-Lederle,*[4] *Orris Allergenic Extract-Lederle.*[7] 0.2 and 0.01 mg. of nitrogen per cc.: *Cow Dander Allergenic Extract-Lederle,*[4] *Flaxseed Allergenic Extract-Lederle.*[1] 0.2 and 0.001 mg. of nitrogen per cc.: *Cottonseed Allergenic Extract-Lederle.*[1] 0.1 mg. of nitrogen per cc.: *Feathers Allergenic Extract-Lederle,*[4] *Goat Dander Allergenic Extract-Lederle.*[4] 0.1 and 0.01 mg. of nitrogen per cc.: *Buckwheat Allergenic Extract-Lederle.*[2] 0.1 and 0.005 mg. of nitrogen per cc.: *Almond Allergenic Extract-Lederle,*[1] *Peanut Allergenic Extract-Lederle.*[1] 0.1 and 0.001 mg. of nitrogen per cc.: *Dog Dander Allergenic Extract-Lederle,*[4] *Egg White Allergenic Extract-Lederle,*[6] *Kapok Allergenic Extract-Lederle,*[1] *Mustard Allergenic Extract-Lederle.*[9] 0.05 and 0.001 mg. of nitrogen per cc.: *Cat Dander Allergenic Extract-Lederle,*[4] *Rabbit Dander Allergenic Extract-Lederle.*[4]

Allergenic extracts-Lederle are prepared from various substances by extraction with a buffered saline solution composed of sodium chloride 0.5 Gm., potassium dihydrogen phosphate (KH_2PO_4) 0.0363 Gm., sodium phosphate ($Na_2HPO_4.12H_2O$) 0.1431 Gm., Phenol 0.4 Gm., distilled water to make 100 cc.

Products marked 1 are prepared by the following method: The material is shelled and ground, treated with toluene, alcohol and ether. The dry and oil-free flour is extracted with the buffered solution. The extract is dialyzed and sterilized by filtration.

Products marked 2 are prepared by the following method: The powdered whole grains are washed with toluene, alcohol and ether. The buffered saline extract of the defatted flour is dialyzed, concentrated and sterilized by filtration.

Products marked 3 are prepared by the following method: The ground material is treated with toluene and then placed immediately in the buffered extracting fluid. The extract is dialyzed and sterilized by filtration.

Products marked 4 are prepared by the following method: The material is ground in a mortar and washed with ether and alcohol. The dry residue is extracted with buffered extracting fluid. The dialyzed extract is concentrated and the amount of nitrogen per cubic centimeter of the filtered extract is determined by the Kjeldahl method.

Products marked 5 are prepared by the following method: The material is prepared by dialyzing the pressed juice at once against the buffered solution diluted (1-2) until nonirritating to normal skins. The dialyzed extract is concentrated and sterilized by filtration. If the ground material contains very little juice, it is mixed with the extracting fluid and the pressed extract is handled the same as an original juice.

Products marked 6 are prepared by the following method: These extracts are merely dilutions of the original substance in the buffered saline solution. Milk is decaseinated with rennin. The whey is dialyzed against a slightly alkaline buffered solution, concentrated and sterilized by filtration.

Products marked 7 are prepared by the following method: The powdered material is washed with toluene, alcohol and ether. The buffered saline extract of the defatted flour is dialyzed, concentrated and sterilized by filtration. The alcohol-ether treatment is exhaustive and the dialysis continued for a long time in order to insure stability of the extract and complete removal of toxic fractions present.

The product marked 8 is prepared by the following method: Raw unroasted cacao beans are ground and treated with toluene and ether until practically oil free. The resulting powder is extracted with the buffered solution. The extract is sterilized by filtration and standardized on the nitrogen basis per cubic centimeter.

The product marked 9 is prepared by the following method: The powdered material is washed with toluene, alcohol and ether. After evaporation of the fat solvent, it is extracted with the buffered solution. The extract is dialyzed until skin tests prove it to be no longer irritating. The final product is sterilized by filtration and standardized on the basis of its nitrogen content per cubic centimeter.

DIGALEN-ROCHE (CLOETTA) (See New and Nonofficial Remedies, 1931, p. 136).

The following dosage form has been accepted:

Digalen Injectable-Roche: Ampules containing 2.1 cc. Each 2 cc. represents 1 cat unit, in 8 per cent alcohol.

Dosage.—The average dose of digalen injectable-Roche is 2 cc.

BRUCELLA MELITENSIS VACCINE (See THE JOURNAL, Feb. 6, 1932, p. 480).

The National Drug Co., Philadelphia.

Undulant Fever Vaccine.—A heat killed suspension of Brucella melitensis organisms (2,000 million per cubic centimeter) preserved with 0.4 per cent of cresol. The usual sterility tests prescribed by the U. S. government are made, and in addition blood agar streaks are made of the heat killed stock vaccine before the addition of the cresol. Safety tests are made on the stock vaccine by injecting guinea-pigs with the maximum human dose, 1 cc. No potency tests are made. Purity of cultures is determined by the study of colony formation, carbohydrate reactions, and agglutination test with specific serum. The product is marketed in packages of one 5 cc. vial, in packages of one 15 cc. vial, and in packages of one 30 cc. vial.

Dosage.—The subcutaneous injection at seven to ten day intervals of doses of 0.25 cc., 0.5 cc. and 1 cc., respectively, is recommended.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

W. A. PUCKNER, Secretary.

BACILLUS ACIDOPHILUS MILK-HERMES OMITTED FROM N. N. R.

Bacillus Acidophilus Milk-Hermes (Hermes-Groves Dairy Co., Pittsburgh, Pa.) is a whole milk cultured with B. acidophilus. It was accepted for New and Nonofficial Remedies by the Council in 1928. Since the period for which it was accepted would expire at the close of 1931, the firm was asked in June of that year to submit the current labels and advertising for the product in order that the Council might pass on its eligibility for continued inclusion in New and Nonofficial Remedies. The firm did not reply to the report and failed to reply to a second letter. Since noncompliance of a manufacturer with the request for this material deprives the Council of the means of judging the eligibility of the product for continued acceptance, the Council voted to omit Bacillus Acidophilus Milk-Hermes from New and Nonofficial Remedies, 1932.

IODYL NOT ACCEPTABLE FOR N. N. R.

Under the name Iodyl, the Vel Company, Long Island City, New York, markets a preparation stated to be "an Iodine Dusting Powder containing approximately .69% resublimed iodine and 99.31% of pure boric acid." On the label and in the advertising the iodine content is declared, but the identity and amount of boric acid is not declared on the label, and in the advertising the presence of boric acid but not the amount is declared. The preparation is proposed for use in the treatment of chronic suppurative otitis and in nasal sinuses.

The Council declared Iodyl unacceptable for New and Nonofficial Remedies because a proprietary name for a simple unoriginal mixture of iodine and boric acid cannot be recognized and because the use of a mixture of iodine and boric acid in fixed proportions is not in the interest of rational therapeutics.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

VAN CAMP'S PURÉED GREEN BEANS

Manufacturer.—The Van Camp Packing Company, Inc., Indianapolis.

Description.—Puréed green beans slightly seasoned with salt, retaining in large measure the original vitamin and mineral content of the raw beans used; packed in enamel lined tins.

Manufacture.—Fresh, crisp green beans of choice quality are carefully inspected and any imperfect or discolored ones eliminated. The selected beans are washed in a cylinder equipped with high pressure sprays of water. Following this they are given a short blanch in boiling water, immediately removed from the water, and pressure cooked in an atmosphere of steam. The cooked beans are puréed in an atmosphere of water vapor by being forced through a screen the openings of which are of such size as to produce the desired fineness and texture in the final product. Highly fibrous portions of the beans are discharged from the end of the screen and are discarded. The puréed material is adjusted with hot water to the desired consistency, slightly seasoned with salt, heated, and immediately filled into enamel lined tins, which are sealed and heat processed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	92.0
Total solids	8.0
Ash	1.2
Salt (NaCl)	0.6
Fat (ether extract)	0.2
Protein (N × 6.25)	1.4
Sucrose (copper reduction method)	2.0
Reducing sugars as dextrose	0.4
Crude fiber	0.9
Total carbohydrates other than crude fiber (by difference)	4.3
Alkalinity number (cc. of normal acid per gram of ash)	2.1
pH	5.2

Calories.—0.2 per gram; 6 per ounce.

Vitamins.—The vitamin content of the raw beans is retained in large measure in the manufacturing process by the use of equipment and procedure which excludes admixture of air; the vegetable material is exposed to steam atmosphere only.

Claims of Manufacturer.—The Puréed Green Beans are supplementary to the infant milk diet, and a valuable protective food, having a smooth consistency supplying a desirable bulk without roughness. The puréeing renders the nutrient content readily available for digestion. The product is scientifically prepared to retain in large degree the natural mineral and vitamin values of green beans.

MORTON'S FREE RUNNING SALT

Manufacturer.—Morton Salt Company, Chicago.

Description.—A table salt containing 0.7 per cent added magnesium carbonate which tends to preserve its "free running" properties.

Manufacture.—The raw salt is obtained by hydraulic mining from underground deposits of rock salt from 250 to 2,300 feet deep by pumping surface water into wells drilled into the salt body. The water with dissolved salt is forced to the ground surface and conveyed to treating and settling tanks, where the brine is chemically treated with small quantities of calcium hydroxide and sodium carbonate for the reduction of natural impurities and is concentrated in "vacuum" pans; the precipitated salt crystals are removed by special mechanical devices. The salt crystals are washed with fresh brine to remove adhering brine containing impurities from the evaporation process. The salt, after washing, is a thick slurry of crystals and brine; excess brine is removed by filtering and the crystals are dehydrated to about 2.5 per cent moisture. The dried salt is further dried at 132-148 C. in rotary kiln driers to 0.1 per cent moisture. The kiln dried salt is mechanically separated into crystals of various granulations. Salt of a definite granulation is mixed with about 0.7 per cent magnesium carbonate, which tends to keep it "free running." The mix is automatically packed in special moisture-resisting cartons and sealed.

An only exception to the foregoing procedure occurs when the crude salt is produced by solar evaporation of sea water, whereby a very coarse large crystal salt is obtained. This crude salt is washed and is dissolved in fresh water, and the brine is handled as described.

Analysis (submitted by manufacturer).—

	per cent
Moisture	0.10
Calcium carbonate	0.01
Calcium sulphate	0.52
Calcium chloride	0.03
Magnesium chloride	0.01
Magnesium carbonate	0.70
Salt (NaCl)	98.60

Claims of Manufacturer.—Morton's Free Running Salt is for all table and cooking uses of salt. The added magnesium carbonate tends to preserve its "free running" qualities.

BROMM'S KEW BEE BREAD

Manufacturer.—L. Bromm Baking Company, Inc., Richmond, Va.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, patent flour of northwest and southwest wheats, water, lard, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, dextrose, lard, powdered skimmed milk, a mixture of calcium acid phosphate and calcium peroxide and potato flour to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	32.6
Ash	0.8
Fat (ether extraction method)	1.2
Protein (N × 6.25)	9.8
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	55.4

Calories.—2.7 per gram; 77 per ounce.

Claims of Manufacturer.—A bread of good quality.

CLOVERDALE GINGER ALE (AMBER)

Manufacturer.—Cloverdale Spring Company, Baltimore.

Description.—A carbonated beverage prepared from Cloverdale Mineral Water, sucrose, citric acid, ginger extract and capsicum; colored with caramel.

Manufacture.—The ingredients noted above in definite proportions are dissolved in Cloverdale Mineral Water (THE JOURNAL, March 5, 1932, p. 816). The solution is bottled and carbonated as described for Cloverdale Mineral Water.

Analysis (submitted by manufacturer).—

	per cent
Moisture	90.2
Total solids	9.8
Ash	0.01
Protein (N × 6.25)	0.02
Fat (ether extract)	0.0
Reducing sugars as dextrose	0.8
Sucrose (copper reduction method)	6.3
Titratable acidity as citric acid	0.09
Caramel color	present
Undetermined	2.6
Flavored with essential oils and essence of ginger	

Calories.—0.3 per gram; 9 per ounce.

Claims of Manufacturer.—A bottled, carbonated ginger ale colored with caramel.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Seven dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MAY 14, 1932

THE "TRACE" ELEMENTS IN THE BODY

Any one who consults the books on physiology of a previous generation will soon discover that they contain only scanty accounts of the inorganic constituents of the body and their possible rôle in nutrition. Considerable stress was placed on the need of common salt (sodium chloride); the occurrence of calcium and phosphorus in the bones was well recognized; iron was associated with the hemoglobin of the blood; and the elements potassium, magnesium and occasionally silicon also received mention. All of these were known to exist both in our foods and in our bodies in readily measurable amounts. The occurrence of "traces" of other elements, notably some of the heavy metals, was reported from time to time; but they were regarded as accidental constituents that had found their way into the organism as chance ingredients of the food or water that was consumed. Biologic importance was rarely assigned to them except when through increasing proportions they suggested the possibility of becoming toxic.

In the Mendel anniversary number of the *Yale Journal of Biology and Medicine*, Mary Swartz Rose [1] has pointed out that during the past ten years we have gradually become accustomed to thinking quantitatively in nutrition, not only in terms of calories and grams of proteins, fats and carbohydrates but also in terms of fractions of milligrams of mineral elements and vitamins. Vitamin A exerts a protective action when present in no higher concentration than 1 part in 2 million in the body of the rat; and the minimum protective dose of vitamin D against rickets is reckoned as no more than one ten-thousandth of a milligram of viosterol. Estimates of the total iodine content of the body scarcely exceed 50 mg. Lunde and Closs have recently estimated the iodine in human blood as from 11 to 16 micrograms per hundred cubic centimeters, and the amount necessary to meet all requirements of metabolism at about 0.05 mg. daily. For prevention of goiter in healthy adults much less may be adequate, since von Fellenberg reports about one third of this amount daily as sufficient for the maintenance of iodine balance in an adult. On this basis the iodine requirement for three years would be no more than the amount of iron required for a single day.

Rose points out that investigation as to the occurrence and function of "trace" elements in both plant and animal life is now active. Boron, zinc and manganese have all been shown essential to the growth of maize; boron, to a great variety of dicotyledonous plants; without zinc, wheat and barley die in the early stages of growth, and buckwheat, sunflowers, broad beans and red kidney-beans never come to full maturity or produce seed.

The search for so-called trace elements in foods and in the tissues and fluids of the body is beset with difficulties. The quantities are often too small to be measurable with success by the usual devices of the analytic chemist. In recent years he has therefore called the spectrograph to his aid. In this way exceedingly small amounts of the less familiar inorganic tissue constituents (or contaminants) can be identified in surprisingly small samples of material. By means of spectrographic analysis, Dutoit and Zbinden [2] have investigated the ash of human organs. Rose quotes them as finding chromium, copper and tin in practically all organs; silver and aluminum somewhat less widely distributed; cobalt and nickel in the pancreas but not the liver; titanium in the lungs, only traces elsewhere; zinc especially in the generative organs, thyroid, liver and kidney; tin in the suprarenal glands, and all of these elements in the blood. Spectrographic analysis of the ash of milk has shown traces of arsenic, boron, titanium, vanadium, rubidium, lithium and strontium, heretofore not known to occur in milk.[3]

The latest spectrographic analyses of human tissues come from England. Sheldon and Ramage [4] of Norwich designate as the universally recognized constituents of protoplasm the elements C, H, O, N, P, S, Na, K, Mg, Ca, Cl and Fe. Their latest studies suggest that copper is a universal, and is probably an essential constituent of living tissue. It occurs in greater concentration in fetal tissues than in adult, and reaches its maximum amount in the fetal liver, where the percentage of copper may be as much as ten times in excess of that present in the maternal liver. This is what one might expect in view of the alleged importance of copper in hematopoiesis in early life. Manganese occurs spasmodically in many tissues but is chiefly concentrated in the liver, pancreas, suprarenal and kidney. It is present in bile, fetal bile containing a high proportion. In the blood it appears to be confined to the serum. More surprising are some of the

1. Rose, Mary S.: The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body, Yale J. Biol. & Med. **4**: 499 (March) 1932.

2. Dutoit, P., and Zbinden, C.: Compt. rend. Acad. d. sc. **188**: 1628 (June 17) 1929; **190**: 172, 1930.

3. Wright, N. C., and Papish, Jacob: The Inorganic Constituents of Milk, Science **69**: 78 (Jan. 18) 1929.

4. Sheldon, J. H., and Ramage, H.: A Spectrographic Analysis of Human Tissues, Biochem. J. **25**: 1608, 1931.

added observations. Rubidium is almost as widely distributed as copper and occurs in greatest concentration in the heart and in striated muscle. Silver is found to a less extent than the preceding metals but appears to be a normal constituent of the thyroid and the tonsil. Lead, strontium and lithium were found to occur spasmodically. One's first impression naturally is to regard all these rarer "trace" elements as contaminants rather than essentials or as physiologically significant. The experience of the past few years with iodine and copper, for example, is a warning to keep an open mind on the subject.

THE RECTAL ADMINISTRATION OF SUGAR

The vogue that was attached some time ago to the use of nutrient enemas has disappeared almost completely. There are, of course, not infrequent indications for rectal feeding under conditions in which the oral path of administering food offers temporary difficulties. The earlier attempts to introduce such nutrient products as milk or other semiliquid foods into the rectum to supply imperative needs in the body usually ended in disappointment. It became clear after a time that digestion is a prerequisite for absorption of the foodstuffs. The opportunities for digestive hydrolysis in the lowest reaches of the bowel are extremely limited. Actual investigations presently showed that rectally introduced proteins and fats are returned with the subsequent evacuations of the bowel. One fact, the fairly ready absorption of water from the lower bowel, stands out conspicuously. Hence the alleged benefits of the rectal enema were probably for the most part attributable to the absorption of water and perhaps also salts. In any event it is not unlikely that administration of fluid by rectum is a more useful procedure under some conditions of dehydration than is commonly believed and that it deserves greater recognition in practical medicine.

The end-products of the digestion of sugars are monosaccharides, among which dextrose stands out as the most conspicuous and physiologically characteristic; for dextrose is the normal circulating carbohydrate of the blood. On this account it has been assumed, or at any rate hoped, that dextrose can be freely administered parenterally when indicated. The sugar is, in fact, currently used for intravenous injection; and it can be administered without loss in other ways. A recent textbook [1] clearly summarizes the present views with the statement that the nutrient enema furnishes a valuable means of giving both food and water to the patient who for any reason cannot be adequately fed by stomach. There are, however, definite limits as to both the quantity and the kind of food that may be given in this manner; these limits should be clearly recognized by the physician. The author points out that the injected material does not go beyond the ileocecal valve, unless perchance that valve is incompetent, and all absorption therefore as a rule takes place in the colon. Since the large intestine is intended chiefly as a reservoir in which no appreciable digestion takes place and from which only water and salts are normally absorbed, he adds, its usefulness as an organ of nutrition is obviously limited.

On these accounts "it is seldom if ever advisable to include in them anything other than water, glucose and sodium chloride." [1] Even dextrose has recently fallen under the ban of dependable value. Scott and Zweighaft [2] of the Department of Physiology at Columbia University have administered enemas containing from 20 to 40 Gm. of dextrose, in 10 per cent solution, by rectum to many healthy persons. They have been unable to demonstrate any rise in the blood sugar content as a result of such procedures. They found that a variable and frequently considerable amount of dextrose administered by enema may be recovered from the stools after two and one-half hours. According to Scott and Zweighaft, the sugar that was not recovered in the stools may possibly have risen higher in the large bowel because of antiperistalsis or for some other reason, there to be retained for a slow absorption, partial destruction by fermentation or a later return. A certain amount may have entered the blood stream at a rate too slow to elevate the blood sugar concentration significantly. In any event these studies fortify the views of those earlier investigators [3] who have become skeptical of the practical value of the rectal administration of dextrose.

A COMPARISON OF MILK FROM THE TWO BREASTS

In a recent review of the nutritive aspects of human milk, Macy [1] of the Research Laboratory of the Children's Fund of Michigan emphasizes the fact that at times not only do the most carefully prepared scientific formulas fail to satisfy the nutritive needs of a particular infant but even mother's milk may fail. Therefore, renewed interest has been focused on mother's milk and it is being subjected to careful chemical and biologic investigation in respect to its adequacy in all known details and the possibility of its improvement through maternal care. Macy points out the difficulties of defining a standard composition of breast milk because milk secreted by different women has been shown to vary in composition between wide limits. Furthermore, it has been demonstrated that the fol-

1. McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 2, Philadelphia, W. B. Saunders Company, 1931.

2. Scott, E. L., and Zweighaft, J. F. B.: Blood Sugar in Man Following the Rectal Administration of Dextrose, Arch. Int. Med. **49**: 221 (Feb.) 1932.

3. Levi, David: Brit. J. Surg. **15**: 282 (Oct.) 1927. Mekie, Eric, and Miller, Hugh: Brit. M. J. **1**: 244 (Feb. 9) 1929. Franke, W., and Wagner, R. J.: J. Metab. Research **6**: 375, 1924. Rubino and Varela: Klin. Wchnschr. **1**: 2370 (Nov. 25) 1922.

1. Macy, Icie G.: The Nutritive Aspects of Human Milk, Yale J. Biol. Med. **4**: 451 (March) 1932.

lowing conditions may be effective in altering the quality and quantity of milk secreted: the size and anatomic structure of the mammary gland; the amount and kind of food intake; heredity; the environmental conditions, such as fresh air, sunshine, the amount and intensity of work, rest and exercise; and the emotional make-up of the individual, as well as extraneous disturbances. Evidently there are many influences operating to change not only the total quantity of mother's milk secreted but its integral components. The circumstance that an infant has been fed at the breast is no guarantee of a fixed sort of nutritive intake. Macy notes that even under standardized methods of expression, sampling, and analysis at four-hour intervals during the twenty-four hour day, changes have been observed in the flow and chemical composition of breast milk that are of nutritional and clinical significance.

The quantity of milk secreted by a lactating woman is dependent on the individual capacity of the mammary glands. This thesis has been further established by studies in the Detroit laboratories, where Brown, Macy, Nims and Hunscher [2] have measured the output and composition of milk from the two mammae of women. The two breasts often function differently in the total production of milk and milk nutrients. For example, the total daily quantities in some cases showed differences as great as 346 cc. even under rigidly controlled and standardized conditions. The observers believe that it is logical to expect greater inequalities in total volume output when the baby is the chief performer in securing the milk. Such observations, they state, are significant in considering the nutritional status of infants nourished exclusively on the milk from one breast.

The principal determinations, however, concerned the actual composition of the milk from the two breasts. Earlier conjectures had contemplated the existence of differences. The comment was made, for instance, that differences in the quality of milk from the two mammae were to be expected as the natural sequel of their relative anatomic position in relation to the blood supply. On the contrary, it has been found by the Detroit workers that the two mammae secrete milk uniform in the percentage concentration of fat, protein, lactose, total solids, solids not fat, total ash, calcium and phosphorus. At least this is true under carefully controlled conditions of milk expression and analysis, and on the basis of samples taken at each four hour interval during the twenty-four hour day. This indicates uniformity in cellular activity in the two glands. It has been declared, as Macy and her co-workers point out, that the processes involving the production of the milk fat are governed by a mechanism entirely separate from that regulating other milk constituents, although the actual processes involved remain obscure. The formation of fat has been attributed to a breaking away and degeneration of mammary gland cells. However, simultaneous secretion by the two glands of milk identical in fat concentration would imply that such a degeneration would proceed at the same rate and magnitude in the two breasts. Consequently, as Macy concludes, the data presented may offer convincing evidence against theories of the derivation of milk fat from cell degeneration, and evidence for theories of the formation of milk fat by processes of cellular secretion.

2. Brown, Minerva; Macy Icie G.; Nims, Betty, and Hunscher, Helen A.: Human Milk Studies: VIII. A Comparison of the Composition of the Milk from the Two Breasts, Am. J. Dis. Child. **43**: 40 (Jan.) 1932.

Current Comment

HYPERVITAMINOSIS D AND ARTERIOSCLEROSIS

Following the discovery that irradiated crude cholesterol and then, more specifically, irradiated ergosterol (viosterol) promotes mineralization of rachitic bones, the observation was made that enormous overdosage with this potent therapeutic agent leads to the development of distinctly pathologic changes in the body. It was variously stated that irradiated ergosterol, as customarily employed, contained a toxic substance as well as a calcifying principle. The characteristic lesions resulting from administration of excessive amounts of this material are areas of calcification widely distributed in the tissues. Vanderveer [1] has recently reported observations of hypervitaminosis D and arteriosclerosis which have a decided bearing on the multiplicity of effects induced by overdosage with irradiated ergosterol. Rabbits were employed and the tissues were examined microscopically after spontaneous death. Gross examination of the aorta showed "an irregularity of contour from an outpouching and twisting of its walls." When cut open, grayish, plaquelike depressions were seen on the intimal surface, these areas being "bounded by the normal arterial wall, which had the appearance of a fold in this situation." Further examination indicated that the arteriosclerosis thus produced is not specific. Lack of round cell infiltration showed that inflammatory processes had no part in its development. It appears that a preliminary change of nonspecific nature occurs in the matrix surrounding the elastic fibers in the media, which change is followed by a deposition of calcium salts around the fibers in that region. The resulting inhibition to the mechanical action of the elastic fibers is apparently responsible for the characteristic circulatory disturbances and for hypertrophy of the heart and smaller blood vessels. The fibers are stretched out and fixed by the incrustation of lime salts, so that at death the usual postmortem contraction does not take place; these areas appear as dilatations from the outside of the vessel and as thin places in the vessel wall in microscopic section. Similar examination of cardiac and gastric muscle and of the kidneys was made. Calcification due to hypervitaminosis D appears to follow a preliminary injury to the tissue concerned. The cementing substance around the elastic fibers and muscle

1. Vanderveer, H. L.: Hypervitaminosis D and Arteriosclerosis, Arch. Path. **12**: 941 (Dec.) 1931.

cells as well as tissues undergoing hyaline degeneration seem to be favored loci for deposition of lime salts. Vitamin D has only recently been isolated and prepared in crystalline form;[2] this substance is presumably a definite chemical compound. It will be of great interest to determine whether or not the observed toxic properties of irradiated ergosterol can still be demonstrated with crystalline vitamin D.

Association News

PERSHING HALL MEMORIAL

The total sum to date for the Pershing Hall Memorial is $2,510.10. The following list represents the most recent contributors:

C. L. Ogle, M.D., Grants Pass, Ore.
Herman L. Kretschmer, M.D., Chicago.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 2:25 to 2:30 p. m., over Station WBBM (770 kilocycles, or 389.4 meters), and on Friday from 1:25 to 1:30 p. m. over Station WBBM and other stations of the Columbia Broadcasting System.

The program for the week is as follows:

May 16. Why Plant a Garden?
May 18. Hot Cereal and Milk.
May 20. Sick Enough.

There is also a fifteen minute health talk sponsored by the Association on Saturday morning from 11:15 to 11:30 over Station WBBM, Chicago.

The program for the week is as follows:

May 21. What To Do — What To Do.

This schedule is based on Chicago Daylight Saving Time, one hour faster than Central Standard Time.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

License Revoked.—At a meeting of the state board of medical examiners in Los Angeles, February 2, the license to practice medicine and surgery in the state of Dr. Clarke S. Smith, was revoked on a charge of violation of his probation (THE JOURNAL, Aug. 8, 1931, p. 395), testimony being introduced to the effect that he is now incarcerated at the Spadra State Hospital for Narcotic Addicts. Dr. Smith was committed to the hospital in January for a term of not less than eight months or more than two years.

Society News.—Dr. Benjamin Y. Katz addressed the Los Angeles County Medical Association, April 21, on "Erysipelas of the Pharynx and Larynx," and Dr. Norman J. Kilbourne, "Leg Ulcers of Unrecognized Etiology—X-Ray Diagnosis of Circulatory Diseases with Uroselectan."——Dr. Robert B. Greenough, Boston, addressed the San Diego County Medical Society, May 5, on "What the Doctor Can Do in the Control of Cancer," and Dr. Henry J. Ullmann, Santa Barbara, "The Work of the Cancer Commission."——The Oakland Urological Club was recently organized. Among others, Dr. Arthur E. Dart spoke at the initial meeting on "Recurrent Adenoma of the Prostate."

Survey of Heart Disease.—All forms of heart disease have been made reportable in San Francisco for a period of three months, beginning March 15, 1932, with the possibility of extending the time to one year, in a city-wide survey on heart disease morbidity. Collaborating in the survey are the San Francisco Department of Public Health and the San Francisco Heart Committee, which constitutes a joint affiliation with the San Francisco County Medical Society and the San Francisco Tuberculosis Association. Physicians in the city have been provided with suitable forms for reporting all their cardiac cases. A final analysis of the data will be made after completion of the study. This summary will include, as a comparative study, two provisional surveys recently undertaken by the cardiac clinics section of the San Francisco Heart Committee, of which Dr. John J. Sampson is chairman.

Summer Courses at the University.—Summer courses for graduates in medicine will be offered at the University of California Medical School, San Francisco, June 6-18. The subjects to be presented are general medicine and surgery, ophthalmology, otorhinolaryngology, genito-urinary diseases, pediatrics, circulatory diseases, diseases of the blood-forming organs, diseases of the endocrine glands, including diabetes, and diseases of the gastro-intestinal tract, laboratory diagnosis, pathology and operative technic. There will also be symposiums in the departments of medicine and surgery, daily noon lectures and clinicopathologic conferences and round table discussions on three evenings each week, open to the medical public free of charge. Among those giving courses in the summer session at the university, June 23-August 5, will be J. W. Bridges, Ph.D., professor of abnormal psychology, McGill University Faculty of Medicine, and Mark A. May, Ph.D., professor of educational psychology at Yale University. Professor Bridges will offer two courses, one on personality, normal and abnormal, and the other on abnormal psychology. Professor May will give one course on personality and character tests.

GEORGIA

State Medical Meeting.—The eighty-third annual session of the Medical Association of Georgia will be held, May 17-20, in Savannah with headquarters at the Hotel DeSoto, and under the presidency of Dr. Arthur G. Fort, Atlanta, who will speak on "Economic Drift of Modern Medicine." Dr. Dean Lewis, Baltimore, will deliver the Abner Wellborn Calhoun Lecture on "Clinical Manifestation of Malignant Disease." Public meetings, Wednesday, will be addressed by Drs. William Mithoefer, Cincinnati, on "Relation of Diseases of the Nasal Accessory Sinuses to Systematic Derangements," and Walter C. Alvarez, Rochester, Minn., "Practical Points in the Care of Patients with Indigestion." At a meeting, Thursday, Dr. William R. Dancy, Savannah, will be presented with the Crawford W. Long Memorial Prize. There will be symposiums on sinus disease and the psychoneuroses, and public health. Scientific papers to be presented will include "Tuberculosis of the Kidney," Wallace L. Bazemore, Macon; "Abnormal Ureters," Spencer A. Kirkland, Atlanta; "Perinephritis Abscess," Emmet B. Anderson, Americus; "Effects of Injections of Ovarian Follicular and Anterior Pituitary Hormones on Conception and Pregnancy in Laboratory Animals," George Lombard Kelly, Augusta; "An Efficient Method of Traction for Fractures of Femur," Charles H. Watt, Thomasville; "Method of Precision in the Diagnosis of Early Pregnancy (Aschheim Zondek Test)," H. F. Sharpley, Jr., Savannah, and "Rickets," Mercer Blanchard, Columbus. The annual dinner of the alumni of Emory University School of Medicine will be held Wednesday, as will the annual dinner of the alumni of the University of Georgia Medical Department.

ILLINOIS

Personal.—Dr. J. C. Westervelt, Shelbyville, recently completed fifty-four years in the practice of medicine; Dr. Westervelt has served also as mayor of the city for several terms.

Chicago

Personal.—Dr. James H. Hutton, Chicago, has been appointed consulting endocrinologist to the hospitals of the Illinois State Department of Public Welfare.

Society News.—A symposium on Perthes' disease was conducted before the Chicago Roentgen Society, May 11. The participants included Drs. Dallas B. Phemister, Robert C. Lonergan, Marcus H. Hobart and Gentz Perry.——At a recent meeting of the Chicago Society of Allergy, Dr. Leon Unger was made president, and Dr. Meyer R. Lichtenstein, secretary. Dr. Isadore Pilot is vice president.

Cook County Hospital Graduate Clinics.—The seventh annual postgraduate clinics by the attending staff of Cook County Hospital will be held under the auspices of the Chicago

2. Crystalline Vitamin D, editorial, J. A. M. A. **97**: 1628 (Nov. 22) 1931.

Medical Society, June 6-18. The object of the clinics is to furnish information which will aid the practicing physician in the diagnosis and treatment of the more important medical and surgical diseases. Special emphasis will be given to diagnosis, operative technic, pathology and the recent advances in medicine and surgery. The clinics will be divided into two main groups—medical, including the medical specialties, and surgical, including the surgical specialties. They will be held simultaneously throughout the day in two large amphitheaters. Special demonstrations in obstetrics and gynecology will be arranged. A fee of $10 is charged to cover the expense of organization.

Albert B. Kuppenheimer Foundation.—In January, 1931, following the death of Mr. Albert B. Kuppenheimer, it was announced that he had bequeathed $1,000,000 to the University of Chicago for research and study in the field of venereal diseases. At a recent meeting of the board of trustees of the University of Chicago, the Albert B. Kuppenheimer Foundation was established and a committee was appointed to allocate the funds. This committee is composed of Drs. Joseph L. Miller, clinical professor of medicine; Oliver S. Ormsby, clinical professor of dermatology, Rush Medical College; Samuel W. Becker, associate professor of dermatology; Oswald H. Robertson, professor of medicine and acting chairman, department of medicine; Dallas B. Phemister, professor of surgery and chairman of the department of surgery; Fred L. Adair, professor of obstetrics and gynecology; Franklin C. McLean, director, University of Chicago Clinics, and Frank R. Lillie, Sc.D., dean, Division of Biological Sciences. The bequest, which has suffered considerable shrinkage since the original announcement, has been turned over to the university. In accordance with the terms of the bequest, the income is to be expended wholly within the University of Chicago, of which Rush Medical College is a part.

IOWA

Annual Renewal Fees Due Before June 1.—All licenses to practice medicine and surgery in Iowa expire annually on June 30. To renew such a license a licentiate must make a written application for renewal to the state department of health before June 1, enclosing the renewal fee of $1. If a license expires by reason of the licentiate's failure to renew it, it can be reinstated without reexamination only on the recommendation of the board of health and the payment of the overdue fees.

Conference on Child Health.—The Iowa White House Conference on Child Health and Protection was held in Des Moines, April 14-15, with Dr. Daniel C. Steelsmith, state health commissioner, presiding as general chairman. Among the many speakers on the program were Drs. Everett D. Plass, Iowa City, on "Study of Maternal and Neonatal Mortality in Iowa"; Erval R. Coffey, U. S. Public Health Service, "Rural Health Organization"; Andrew H. Woods, Iowa City, "Mentally Handicapped"; Dennis H. Kelly, Des Moines, "Study of Rheumatism in Children in Iowa"; Milford E. Barnes, Iowa City, "Training of Personnel"; Jacob Breid, Toledo, "Indian Children"; Mark L. Floyd, Iowa City, "Chronic Nonspecific Lung Infections in Children in Iowa"; Mae H. Habenicht, Des Moines, "The Handicapped"; Edward H. Lauer, Ph.D., Iowa City, "Physical Education and Recreation," and George D. Stoddard, Ph.D., Iowa City, "Infant and Preschool Child."

KANSAS

Typhoid at College.—Seven cases of severe illness, said to be typhoid, with one death, occurred among students at the Kansas State College of Agriculture and Applied Science, Manhattan, recently. The source was traced to a boarding house near the college. Although all the food handlers had previously been tested, it was later discovered that one of the pantry cook's daughters had typhoid about two years before. It was also brought out that a niece had it about the same time as the daughter. Following another test which was positive, the pantry cook was discharged, since which time no further cases have been reported.

KENTUCKY

Outbreak of Food Poisoning.—Thirty-six students became ill at Cumberland College, Williamsburg, recently, of food poisoning. Investigation disclosed that thirty-three of the thirty-six students had eaten fruited cream dessert. The cook ate the dessert Friday morning and was not sick, but ate some left over in the icebox and had an attack similar to the attacks of the students on the previous day. The remainder of the student body, about sixty-five students, ate "any and all of the supper dishes" and had no ill effects. Examination tests made on all persons employed at three dairies were negative for typhoid or paratyphoid. The conclusions of the investigation indicate that the probable causative agent of the outbreak was the meat and bread dressing which was prepared Thursday and reheated Friday evening, after having remained for some time without refrigeration.

Society News.—A symposium on diseases of the ear and some complications was a feature of the meeting of the Jefferson County Medical Society, April 18; the speakers were Drs. Albert L. Bass, Walter Dean, Gaylord C. Hall and Franklin Jelsma, Louisville. Dr. Thomas Cook Smith, Louisville, read a paper before the society, April 4, on "The Premature Infant." Dr. James Duffy Hancock, Louisville, addressed the society, May 2, on "Nonparasitic Abscess of the Liver."——The Boyd County Medical Society was addressed in Ashland, April 2, by Drs. Albert L. Bass, and Claude T. Wolfe, Louisville, on hay fever and trachoma, respectively.——Speakers before the Christian County Medical Society, April 19, included Drs. Robert Lyle Motley, Memphis, on "Normal and Abnormal Heart Physiology"; Thomas D. Moore, Memphis, "A New Method of Treating Prostatic Obstruction"; William D. Haggard, Nashville, "Cancer of the Colon and Rectum," and Carl R. Crutchfield, Nashville, "Thyroid Surgery with the Radio Knife."——The Four-County Medical Society was addressed, April 28, by Drs. John L. Jones and Philip F. Barbour, Louisville, on diphtheria and scarlet fever and diagnosis and treatment of pneumonia in children, respectively.

MARYLAND

Dr. Sigerist Succeeds Dr. Welch at Johns Hopkins.—Dr. Henry E. Sigerist, director of the Institute of History of Medicine at the University of Leipzig, Leipzig, Germany, has accepted the chair of the history of medicine in Johns Hopkins University Medical School. He will assume his duties July 1. Dr. Sigerist will succeed Dr. William H. Welch, in whose name the chair was founded at the same time that the William H. Welch Medical Library was established. Dr. Sigerist succeeded Dr. Karl Sudhoff as director of the Institute of Medicine at the University of Leipzig in 1925 when, at the age of 70, Dr. Sudhoff retired. Dr. Sigerist gave a series of lectures at Johns Hopkins last October and November, as visiting lecturer in the history of medicine. He studied at the universities of Zurich, London, Leipzig and Munich and received his medical degree at the University of Zurich in 1921. Three years later he was made professor of the history of medicine there. Dr. Welch, who retired last June, was the first professor of pathology at Johns Hopkins, having served in that capacity from 1884 until 1916, when he became the first director of the School of Hygiene and Public Health (THE JOURNAL, Feb. 14, 1931, p. 536). In 1926 he resigned that position to accept the newly created chair of the history of medicine. Dr. Welch's eightieth birthday in 1930 was marked by an international celebration.

State Medical Meeting and Election.—Dr. Joseph Albert Chatard, Baltimore, was elected president of the Medical and Chirurgical Faculty of Maryland at its meeting in Baltimore, April 26-27. The vice presidents are Drs. Samuel A. Nichols, Clarksville; Elliott H. Hutchins, Baltimore, and William S. Seymour, Easton. Drs. Walter D. Wise and Charles E. Brack, Baltimore, were reelected secretary and treasurer, respectively. Dr. Randolph Winslow, who was nominated delegate to the American Medical Association, is the oldest living continuous member of the faculty, having been active in its affairs for fifty-five years. The Trimble lecture was delivered by Dr. Henry A. Christian, Boston, on "Digitalis in Relation to the Therapy of Heart Disease." Another Trimble lecture was given by Dr. Alexius McGlannan on "Postoperative Thrombosis and Embolism." Other speakers on the program included Drs. Joseph Albert Chatard on "Necrology"; John Mason Hundley, Jr., "Hyperplasia of the Endometrium"; Henry J. Walton, "Roentgenology in Obstetrical Diagnosis"; Warfield M. Firor, "Effect of Hypophysectomy on Rabbit Pregnancy"; Lay Martin, "Studies on a New Organic Material, Presumably an Enzyme, Secreted into the Gastric Juice"; Allen F. Voshell, "Progressive Pseudohypertrophic Muscular Dystrophy"; Lewellys F. Barker, "Relation of the State Board of Health to the General Practitioner"; Earle P. Clemson, "Acute Hydronephrosis; Hydro-Ureter," and William H. Pearce, "The Alcoholic Problem." At a general meeting, April 27, a portrait of Dr. Henry M. Hurd, the first medical superintendent of Johns Hopkins Hospital, was presented, as well as a picture of Dr. Caleb Winslow by his sons Drs. John R. and Randolph Winslow.

MASSACHUSETTS

Mental Hygiene Clinics.—Two new child guidance clinics have been organized and started within the last two months in Gloucester and Lowell. The Gloucester Clinic is under the auspices of the Danvers State Hospital, and the Lowell Clinic under the auspices of the state division of mental hygiene. There are now seventy-eight mental hygiene clinics for children and adults in the state.

Courses for Graduates at Harvard.—A special four months' course in internal medicine began at Harvard University Medical School, April 1, and will extend to August 1. A course in orthopedic surgery begun in April will be continued through May. Beginning June 20 for six weeks, a course in internal medicine at the Massachusetts General Hospital will be carried on in charge of Dr. Frank Dennette Adams. Dr. Samuel A. Levine will conduct a course in modern diagnosis and treatment of heart disease at the Peter Bent Brigham Hospital during July. There will be a symposium on genito-urinary surgery, July 11-16, which will be an intensive review of diagnostic and operative problems under the direction of Dr. William C. Quinby. Full information may be obtained from the assistant dean, Courses for Graduates, Harvard University Medical School, Boston.

MINNESOTA

Physicians Appointed to Recodify Health Ordinances.—A committee of six local physicians has been appointed in Duluth to recodify existing health ordinances, in cooperation with Dr. Mario McC. Fischer, recently appointed director of public health. When the proper health and sanitary code has been drawn up, it will be recommended for adoption to the city council with simultaneous recommendation of repealing all existing health ordinances. Following adoption of the new ordinance, the committee of six will be appointed as the board of health under it.

Dr. Rothrock Honored.—Dr. John L. Rothrock, St. Paul, was recently the guest of honor at a dinner given by 125 members of the medical profession. Dr. Rothrock, who has practiced in St. Paul for more than forty years, was recently promoted to a professorship of obstetrics and gynecology at the University of Minnesota School of Medicine. He addressed the dinner meeting on "Medical Progress in the Last Forty Years." Although Dr. Rothrock's retirement from active practice has already been announced, he now intends to give up his practice gradually.

State Medical Meeting at St. Paul.—The seventy-ninth annual session of the Minnesota State Medical Association will be held, May 23-25, at the Auditorium, St. Paul, under the presidency of Dr. Melvin S. Henderson, Rochester. Hotel headquarters will be at the Lowry Hotel. The program will include clinicopathologic conferences, a medical economics meeting, and symposiums on functional disorders and pediatrics. Speakers to be heard at the meeting will include Edward A. Fitzpatrick, LL.D., Milwaukee; Drs. Olin West, Secretary, American Medical Association, Chicago; Walter Sebening, Frankfort-on-the-Main, Germany, and Theodore M. Davis, Greenville, S. C. Among the topics listed for discussion are the element of fear in the development of functional disorders; the appeal of quackery to the neurotic patient; glandular dysfunction as related to the sexual hormone; pathogenic parasites in man; surgical use of maggots; professional pharmacy as applied to the physician; hemorrhoidectomy—an anatomic method; preliminary hemostasis in goiter surgery; gradual decompression of the biliary system, and subdiaphragmatic and liver abscess. A fracture clinic will be held Wednesday afternoon.

MISSISSIPPI

State Medical Election.—At the annual meeting of the Mississippi State Medical Association, April 14, Dr. James M. Acker, Jr., Aberdeen, was installed as president; Dr. John W. D. Dicks, Natchez, was made president-elect, and Dr. Thomas M. Dye, Clarksdale, was reelected secretary. The next annual session will be held at Jackson, May 9-11, 1933.

MISSOURI

Society News.—Arthur I. Kendall, Dr.P.H., Chicago, among others, addressed the Jackson County Medical Society, May 10, on "Filtrability of Bacteria and Its Clinical Significance."——Dr. William L. Nelson addressed the St. Louis Medical Society, April 12, on "Interpretation of Abnormal Personality," and Miss M. E. Steele, social worker, Psychiatric Child Guidance Clinic, "The Genetic Development of Abnormal Personality."

Malaria Control Program.—It has been announced that the malaria control program of the Missouri Pacific Lines, which has been conducted for the last eight years, will be continued this year. The cost of this year's work will bring the total expended for this purpose to $120,000, part of which has been borne by the communities in which the work has been done. Mr. L. A. Henry, sanitary inspector and engineer, with headquarters in St. Louis, is directing the work. The program calls for the destruction of mosquito breeding places by oiling ponds and stagnant creeks, screening of windows and the distribution of quinine among residents of the communities.

Suspend Clinical Years at Missouri.—The clinical years of study at the University of Missouri School of Medicine will be suspended, beginning August 31, until such time as the university finances permit their continuance, it was announced, April 2. The third and fourth years of study were reestablished a year ago last fall by the board of curators, after having been discontinued since 1910. During the present academic year about twelve students have been enrolled in the third year, and the fourth year curriculum was to have gone into effect next fall. Provision has been made to transfer the advanced students to other institutions, and arrangements may be made whereby these students will receive their degrees from the University of Missouri on the completion of their course elsewhere. Concerning the suspension of the course, it was stated that the "suspension is temporary in character and is due entirely to the shortage of state funds. The establishment and maintenance of the third and fourth years in medicine at Columbia have been amply justified. The clinical facilities provided have been more than sufficient in practically all branches for modern, medical education."

NEBRASKA

State Medical Meeting at Lincoln.—The annual meeting of the Nebraska State Medical Association will be held at the Lincoln Hotel, Lincoln, May 24-26, under the presidency of Dr. Lucien Stark, Norfolk. There will be symposiums on toxemias of pregnancy and cerebral birth injuries, prevention and treatment. Speakers at this meeting will include Drs. Thomas J. Kinsella, Glen Lake, Minn., on "Surgical Aspects of Pulmonary Tuberculosis"; Charles G. McMahon, Superior, "Traumatic Surgery in a Rural Hospital"; William J. Arrasmith, Grand Island, "Hyperthyroidism and Neurasthenia"; Ernest S. Wegner, Lincoln, "Infant Feeding"; Herbert H. Davis, Omaha, "Pathological Diagnosis and Treatment of Tumors of the Breast"; Karl A. Menninger, Topeka, Kan., "Sexual Neurosis in General Practice: Impotence and Frigidity"; Earle G. Johnson, Grand Island, "Diseases of the Gallbladder"; William J. Gentry, Gering, "Mumps with a Double Complication of Meningitis and Pancreatitis"; J. Frederick Langdon, Omaha, "Fascia Transplant in Treatment of Hernia"; Arthur D. Dunn, Omaha, "Cholecystography—Discussion of Intravenous and Oral Methods"; Charles M. Swab and Herbert F. Gerald, Omaha, "Present Status of Botulism in Food Poisoning"; Andrew C. Ivy, Chicago, "Physiology of Mucus Secretion with Some Experimental Results on the Prevention of Ulcer with 'Gastric Mucin'"; Walter D. Abbott, Des Moines, "Surgical Procedures on the Sympathetic Nervous System in the Treatment of Peripheral Vascular Diseases"; Walter C. Alvarez, Rochester, Minn., "Practical Points in the Handling of Patients with Gastro-Intestinal Disease."

NEW JERSEY

Society News.—Dr. Harold Neuhof, New York, addressed the Hudson County Medical Society, May 3, on "Studies in the Diagnosis and Treatment of Pulmonary and Pleural Suppuration."——The Camden County Medical Society was addressed, May 3, by Drs. Vincent P. Del Duca on "Chronic Subdural Hematoma in an Infant with Necropsy Findings"; David F. Bentley, Jr., "Hematuria," and Hyman I. Goldstein, "Heredofamilial Angiomatosis with Recurring Familial Hemorrhages."——Dr. Edgar B. Friedenwald, Baltimore, addressed the Atlantic County Medical Society, May 13, at Atlantic City, on "Diet Problems and Therapeusis in Children."

Tuberculosis Institute.—A five-day postgraduate tuberculosis institute will be given at the Jersey City Medical Center, May 16-25, under the joint auspices of the Hudson County Medical Society, Hudson County Tuberculosis League, and the Hudson County Tuberculosis Sanatorium and Clinics. Dr. James Burns Amberson, Jr., assistant professor of clinical medicine, Columbia University College of Physicians and Surgeons, New York, will be the guest lecturer and will deliver a didactic lecture each day, followed by bedside instruction. Dr. Amberson's subjects will be: pathology and pathogenesis;

x-ray and physical diagnosis; symptomatology and clinical course of tuberculosis; nontuberculous chest diseases and differential diagnosis, and treatment of tuberculosis.

Courses in Pharmacy.—The New Jersey state board of pharmacy, Trenton, adopted a resolution, March 1, governing the approval of four year courses in pharmacy. Courses totaling less than 800 hours of instruction per college year for each of the four years of the course and which do not include at least 40 per cent of laboratory work are among those which will not be approved. In the near future, the state board reports, it will request all colleges of pharmacy desiring to submit their courses for approval to do so. In 1929, the board adopted a resolution making it mandatory for applicants for registration as pharmacists in New Jersey, who begin their college course in pharmacy any time after Jan. 1, 1932, to submit proof of graduation from a four year course in a college of pharmacy approved by the board. A resolution was adopted in 1930, declaring that the board's approval shall be confined to such courses and institutions as will recognize the need for fundamental training in physics, chemistry and biology as a basis for the course in pharmacy, as well as the need for the addition of so-called cultural subjects to the curriculum.

NEW YORK

Personal.—Fenimore D. Beagle, who has been connected with the state health department thirty-four years, has been appointed secretary of the health department, succeeding Dr. Huntington Williams, who resigned last October to become director of health of Baltimore.——Dr. Lillian DeArmit, Schenectady, was recently appointed assistant school medical inspector in the medical inspection bureau of the New York State Education Department. She will maintain supervision of medical inspection and health service in the state normal schools.

Changes at Penal Institutions.—Dr. Frank L. Heacox, physician at Auburn prison, has been appointed superintendent of the State Training School for Women, Albion. He succeeds Dr. Gordon F. Willey, who became superintendent of the Bedford State Reformatory for Women, replacing Dr. Leo J. Palmer. Dr. Palmer was made warden of the new state "medium security prison" at Wallkill. The latter institution is reported to be a prison without walls, fences or bars, where inmates live in rooms, not cells. Only short-term convicts are to be sent to the new prison, which will eventually have a capacity of 500 prisoners.

New York City

Eighth Harvey Lecture.—Dr. Albert Policard, Lyons, France, will deliver the eighth Harvey Society Lecture at the New York Academy of Medicine, May 19, on "Histochemistry: Present State and Future."

Course on Tumors.—Dr. William H. Woglom will give a course in the pathology and diagnosis of tumors at the Institute of Cancer Research in connection with the summer session of Columbia University, beginning July 5 and continuing six weeks. Classes will be held daily from 2 to 4 p. m., except Saturday, and the fee will be $37. Application should be made to the director of the summer session, Columbia University.

Dr. Diner Retires as Dean.—Dr. Jacob Diner is now dean emeritus of Fordham University College of Pharmacy, following his retirement as dean on account of ill health. Dr. James H. Kidder, a 1928 graduate of Cornell University School of Medicine, has been appointed to succeed Dr. Diner. Dr. Diner graduated from Fordham University School of Medicine in 1913. He is president of the New York State Board of Pharmacy.

Study of Heart Disease in Children.—The department of education is undertaking a city-wide study of cardiopathic children now attending regular classes in the elementary schools, the *Weekly Bulletin* states. Parents of children whose record indicates the presence of any cardiac abnormality will be requested to take the child to a physician who is also asked to give his opinion as to whether the child should be in a hospital or in a convalescent home; whether school attendance is advisable; whether attendance at a special class for cardiac patients is indicated, and whether the child should climb stairs.

NORTH CAROLINA

State Medical Election.—Dr. John B. Wright, Raleigh, was installed as president of the Medical Society of the State of North Carolina at its annual meeting, April 20; Dr. Isaac H. Manning, Chapel Hill, was made president-elect, and Dr. Lewis B. McBrayer, Southern Pines, reelected secretary. The next annual meeting will be held in Raleigh, April 17-19.

OHIO

Society News.—The Union Medical Association was addressed, April 13, by Drs. George N. Wenger, Massillon, on "Anal Pruritus"; Maxwell Harbin, Cleveland, "Surgery of the Knee Joint"; Alex M. Rosenblum, Youngstown, "Pneumonia," and David S. Arbuckle, Akron, "Relation of Sinus Disease to Asthma."——Dr. Harold E. B. Pardee, New York, addressed the Columbus Academy of Medicine, April 11, on arteriosclerotic heart disease.——Dr. James M. Pierce, Cincinnati, addressed the Montgomery County Medical Society, May 6, on "Hygiene of Pregnancy."

New Admission Regulations at Cincinnati.—Commencing in September, 1934, candidates for admission to the freshman class in the University of Cincinnati College of Medicine must present official evidence of three years of college preparation of not less than ninety semester hours, in a college of satisfactory standing. The following subjects must be included: chemistry; zoology or general biology; general physics; English; foreign language, and embryology. Preference will be given to those applicants who are graduates of approved colleges and to those who have completed three years of college work and who signify that they will receive their academic degree on the satisfactory completion of the first year of the medical course. Preference will also be given to those applicants for admission who, in the opinion of the committee on admission, present evidence of high achievement in their college education and who are most likely to succeed in medicine, rather than to those who present the largest number of hours credit, or who have limited their preparation to the premedical sciences. Candidates for admission to the freshman classes of 1932 and 1933 will be required to present the minimum requirements in current effect at the school.

OKLAHOMA

Society News.—At a recent meeting of the Southern Oklahoma Medical Society in Duncan, the speakers included Drs. George N. Bilby, Oklahoma City, "Relation of Public Health to the Medical Profession"; Udonna C. Boon, Chickasha, "Iritis"; Horace Reed, Oklahoma City, "Surgery as an Aid in the Treatment of Advanced Pulmonary Tuberculosis"; Leander A. Riely, Oklahoma City, "Diseases of the Gallbladder," and Edward P. Allen, Oklahoma City, "Toxemia of Pregnancy." Dr. Dock Long, Duncan, also spoke.——The Muskogee County Medical Society was addressed recently by Drs. Francis B. Fite on "Early Day Surgery in Territorial Days"; Jesse L. Blakemore, "Obstacles Met and Overcome by the General Practitioner in Organized Medicine before Statehood"; Floyd E. Warterfield, "Early Day Practice," and Claude A. Thompson, "Organized Medicine, Its Outlook and Prospects at This Time and Since Statehood."

PENNSYLVANIA

Personal.—Dr. Eugene A. Conti, Pittsburgh, was recently appointed medical director of Allegheny County, succeeding Dr. John R. Conover.——Dr. Frederick Whitney Davis has been appointed health officer of Lackawanna County, succeeding Dr. Frank R. Wheelock.

Philadelphia

Changes at Temple University.—Announcement has been made of the following changes and additions to the staff at Temple University Medical School:

Dr. Lowrain E. McCrea, to associate in genito-urinary surgery.
Drs. James Merriman Lynch and Nathaniel Hurwitz, clinical assistants in medicine.
Dr. George D. Mulligan, clinical assistant in rhinolaryngology.
Dr. Joseph A. Parrish, clinical assistant in surgical research.
Dr. Joseph Weiner, instructor in medicine.

Society News.—The Obstetrical Society of Philadelphia was addressed, May 5, by Drs. Thaddeus L. Montgomery on "Lesions of the Placental Vessels," and Clifford B. Lull on "Cesarean Section in Philadelphia."——Among others, Dr. George U. Pillmore addressed the Philadelphia Roentgen Ray Society, May 5, on "Economic Problems of the Hospital Radiologist."——A symposium on cancer constituted the meeting of the College of Physicians of Philadelphia, May 4.——Drs. Lee A. Rademaker and Benjamin F. Buzby spoke before the Philadelphia Academy of Surgery, May 2, on "Effects of Blood in Experimental Peritonitis" and "Recurring External Dislocations of the Patella," respectively.——Harold S. Burr, Ph.D., New Haven, Conn., addressed the Medical Club of the Woman's Medical College of Pennsylvania, May 6, on "An Electrodynamic Theory of the Development of the Nervous System."

WISCONSIN

Society News. — Dr. Irving F. Stein, Chicago, addressed the Kenosha County Medical Society at Kenosha, April 21, on "Value of Roentgen Diagnosis in Obstetrics."——Dr. Temple S. Fay, Philadelphia, addressed the Milwaukee Academy of Medicine, April 19, on "Management of Cerebral Trauma and Intracranial Pressure."——Dr. Thomas C. Galloway, Evanston, Ill., and Norbert Enzer made addresses before the Medical Society of Milwaukee County, April 8, on "Surgical Diathermy in Otolaryngology" and "Relationship of Pathology to the Practice of Medicine," respectively.——At a meeting of the Milwaukee Pediatric Society, April 13, Dr. Louis W. Sauer, Evanston, Ill., spoke on pertussis and Dr. George Light on otitis media and sinusitis in infants and children.

Course in Obstetrics and Gynecology.—A twelve weeks' course in obstetrics and gynecology will be conducted in southwestern counties of the state, beginning June 13. The program, which will be held in La Crosse, Tomah, Portage, Platteville, Richland Center and Monroe, is sponsored by the state medical society, the University of Wisconsin Medical School and the university extension division. The meetings in each center will be held on the same day each week for twelve weeks at the same time and place. The instructors will be Drs. Otto H. Schwarz, professor of obstetrics and gynecology, Washington University School of Medicine, St. Louis, and Everett D. Plass, professor of obstetrics and gynecology, State University of Iowa College of Medicine, Iowa City. Subjects to be covered will include the pelvis, pelvimetry and the contracted pelvis; antepartum and postpartum hemorrhage; causes, diagnosis and treatment; obstetrical analgesia and anesthesia; forceps: indications, contraindications, methods; management of breech presentations and version; cesarean section; uses, indications and abuses; management of normal pregnancy; complications of pregnancy including abortion and premature labor; management of normal labor and management of normal puerperium. The fee for the course is $30. Application may be made to the university extension division, room 108, Madison.

WYOMING

White House Conference and Health Officers' Meeting.—A joint session of the Wyoming White House Conference on Child Health and Protection and the County Health Officers' Association was held in Casper, May 5-7. Drs. Joseph C. Kamp, Casper, spoke on "The Children's Charter"; Herbert L. Harvey, Casper, "Health Education"; Albert B. Tonkin, Riverton, "Maternal and Infant Mortality"; Neil C. Geis, Casper, "Infant and Child Care and Feeding"; Odra S. Pavy, Laramie, "Physical Examination"; Allan McLellan, Casper, "Growth and Development"; Freeman G. Huffman, Wheatland, "Communicable Disease Control"; John H. Goodnough, Rock Springs, "Preventive Medicine and Immunization"; William O. McDermott, Casper, "Sanitation"; Nathan E. Wells, Newcastle, "Medical Service and Administration"; Joseph R. Hylton, Douglas, "Tuberculosis of Spine in Children"; Platt W. Covington, Salt Lake City, "Public Health"; Thomas J. Riach, Casper, "Mental Health of Children in Wyoming," and Arthur G. Crane, Ph.D., president, University of Wyoming, "Children During the Depression." There were many other speakers on the program. Those on the program of the County Health Officers' Association included Dr. McDermott on "City Health and Administration"; Dr. Wells, "Control of Typhoid Fever"; David M. Sayles, Gillette, "Prenatal Care," and Walter O. Gray, Worland, "Tick Fever Immunization."

GENERAL

Directory of Occupational Therapists. — Announcement was made, May 2, that the American Occupational Therapy Association, New York, is about to issue its first annual directory of qualified occupational therapists, which will include the names of those who applied and were found qualified for admission to the National Register established by the association early in 1931. It is hoped that this directory will protect hospitals and related institutions from unqualified persons posing as occupational therapists.

Medical Bills in Congress.—*Changes in Status:* S. 4273 has been favorably reported to the Senate, without amendment, authorizing an annuity to the widow of Dr. Aristides Agramonte, a member of the Yellow Fever Commission (H. Rept. 661). The Economy Bill, H. R. 11597, has passed the House as Part 11 of H. R. 11267, a bill making appropriations for the legislative branch of the government for the fiscal year ending June 30, 1933. The House eliminated all provisions in the bill relating to veterans, and in lieu thereof inserted a provision providing for a joint congressional committee to conduct a thorough investigation of the operation of the laws and regulations relating to the relief of veterans and to report to the Congress, not later than the first Monday in December, 1932, a national policy with respect to veterans and their dependents. *Bill Introduced:* H. R. 11927, by Representative Kurtz, Pennsylvania, to authorize the construction of a veterans' hospital in the counties of Blair, Centre, Clearfield or Cambria, Pennsylvania.

Tuberculosis Meeting in Colorado.—The annual meeting of the National Tuberculosis Association will be held in Colorado Springs, Colo., June 6-9, under the presidency of Dr. Alfred Henry, Indianapolis. Among speakers listed on the program are Drs. Henry Sewall, Denver, on "Allergy in Tuberculosis"; Theobald Smith, Princeton, N. J., "Modern Trends in Bacteriological Research"; James Burns Amberson, Jr., New York, "Comparative Value of Paper and Celluloid Films for Chest Roentgenograms; Report of 1,000 Cases"; Carl H. Greene, Rochester, Minn., "Treatment of Addison's Disease with Cortical Hormone of the Suprarenal Gland," and Col. Earl H. Bruns, Denver, "Nontuberculous Diseases Simulating Tuberculosis." Symposiums will be held on "The Blood Cell Count in the Diagnosis of Active Tuberculosis" and "Racial Aspects of the Tuberculosis Problem." Dr. Gerald B. Webb, Colorado Springs, will address the annual dinner meeting on Robert Koch. The Trudeau medal will be awarded at the opening session. The American Sanatorium Association and the National Conference of Tuberculosis Secretaries will hold meetings concurrently and the western branch of the American Public Health Association will meet, June 9-11.

Medals Awarded. — Two medals were presented by the National Academy of Sciences at its annual dinner, April 26, in Washington, D. C. One was the Public Welfare Medal, which was awarded posthumously to Wickliffe Rose "for his organization and direction of the work of the International Health Board of the Rockefeller Foundation by which he made, to the promotion of public health and welfare, a contribution of world-wide significance and importance." The announcement of the award was made in April, 1931, the medal to be presented at the next meeting of the Academy. However, Dr. Rose died in September, 1931, before the medal was presented and delivery of it was made to his son, H. Wickliffe Rose. The Public Welfare Medal is provided through the Marcellus Hartley Fund, a trust fund established in 1913-1914 through the gift of Mrs. Helen Hartley Jenkins, in memory of her father, Marcellus Hartley. The Mary Clark Thompson Medal and accompanying honorarium of $250 were presented to David White of the U. S. Geological Survey and a member of the academy, for his researches in paleontology. The trust fund providing this medal was established in 1919 by the gift of Mrs. Mary Clark Thompson for whom it was named.

Government Services

Naval Medical Journal Twenty-Five Years Old

The *Naval Medical Bulletin* celebrated its twenty-fifth anniversary with the April issue. The journal was first issued in April, 1907, under the editorship of Dr. William H. Bell, then a passed assistant surgeon. Succeeding editors have been Drs. Charles N. Fiske, James C. Pryor, Ralph W. McDowell, Theodore W. Richards, Joseph L. Nielson, L. W. Johnson, Robert C. Ransdell, J. S. Taylor, William M. Kerr, Luther Sheldon, Jr., and Robert P. Parsons. The bulletin has always been a quarterly publication except for a period from January, 1922, to December, 1925, when it was issued monthly.

Dr. Dunbar Promoted to Rear Admiral

Capt. Arthur White Dunbar was promoted to the rank of rear admiral in the medical corps of the U. S. Navy, March 29. Dr. Dunbar, who was commissioned an assistant surgeon in the medical corps of the navy, Oct. 10, 1894, is at present attached to the bureau of medicine and surgery, navy department, Washington, D. C., as inspector of medical department activities on the East Coast. Admiral Dunbar was ordered to duty as executive and later succeeded to the command of the first hospital ship, the U. S. S. *Relief*. During the World War he was in command of the Hospital Ship *Comfort* and later in command of the Hospital Ship *Mercy*. During the period April, 1925-June, 1927, he served as assistant to the chief of the bureau of medicine and surgery, navy department.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 16, 1932.

The Decline of Tuberculosis in England

The Ministry of Health has published a report on tuberculosis by Dr. A. S. Macnalty, senior medical officer for tuberculosis, which is a comprehensive study of the present position regarding prevention and treatment and a review of the incidence and mortality during the whole period for which figures are available. The salient fact is a great and steady decline. The mortality in England and Wales has fallen by 72 per cent since the decade 1851-1860. The ratio of deaths from tuberculosis to deaths from all causes shows a corresponding decline. Thus, taking the deaths from all causes as 100, the figures for deaths from tuberculosis were:

	Males	Females
Decade 1851-1860	15.7	17.2
Decade 1901-1910	11.4	10.2
Quinquennium 1921-1925	9.5	8.3
Four years, 1926-1929	8.5	7.1

Both the actual and the comparative mortality have fallen more rapidly in females than in males. The mortality per million of population was:

	1901	1929
From pulmonary tuberculosis	1,263	738
From nonpulmonary tuberculosis	544	194

However, tuberculosis is still responsible for 37,000 deaths per annum and for 31 per cent of all deaths between the ages of 15 and 45. Although the decline in mortality is proceeding with fair rapidity in this country and our mortality compares favorably with that of the majority of European countries, it is higher than that of New Zealand, Australia and Canada. In 1928 our mortality per hundred thousand of population was 75.5, while that of New Zealand was 40.9. For the age period 5-45 years, tuberculosis is the chief killing disease. Toward the end of childhood and in young adult life it is responsible for a higher mortality in females than in males. At this period approximately one third of the deaths from all causes among males and almost one half among females are due to tuberculosis, chiefly pulmonary. On the other hand, in middle life and old age the mortality from tuberculosis is much greater in males. The mortality both from pulmonary and from nonpulmonary tuberculosis is higher in urban than in rural districts. In recent years the figures of notification are available and tell the same tale as the mortality. In 1913, 80,788 cases of pulmonary and 36,351 cases of nonpulmonary tuberculosis were notified, while in 1929 the figures were only 57,274 and 18,682.

It is noteworthy that the decline of tuberculosis began before special attention was devoted to the problem. Dr. Macnalty attributes this to higher wages, an improved standard of living, and hygiene and public health measures, with segregation of advanced cases of pulmonary tuberculosis in poor-law hospitals. It was not till the last decade of the nineteeth century that energetic measures were taken against the disease and that the value of sanatorium treatment was appreciated. The diminishing figures year by year afford great encouragement to anti-tuberculosis work.

Tobacco Smoking Denounced

It has chanced that tobacco smoking has been denounced at the same time at two different societies. At a meeting of the Society for the Study of Inebriety, Dr. J. D. Rolleston opened a discussion on the cigaret habit. He said that travelers reported that it was prevalent in South America in the eighteenth century. Thence it spread to Spain, where Casanova spoke of it in 1767. Its diffusion over Europe began with the Crimean War, and Germany was the last country to adopt the cigaret largely. North America did not come under its spell until it had become universal in Europe. There had been a considerable increase in the habit since the Great War, especially among women. The cigaret differed from all other forms of tobacco smoking in nicotine content being lower but carbon monoxide higher. Moreover, furfurol, usually absent from the smoke of the pipe or cigar, and present only in small amount in that of the Turkish cigaret, was in large amount in that of the cheap cigaret. The *Lancet* had stated that habitual cigaret smoking was only slightly less harmful than drinking spirits between meals. It had been computed that each man, woman and child in the United States smoked 1,000 cigarets annually. "Smokers' throat" was mainly due to the pyridine content.

The medical profession was not unanimous as to the part played by tobacco in the causation of certain diseases, particularly those of the heart and especially angina pectoris. Many considered it a precursor of cancer. It was notorious that the deterioration of tuberculous persons who smoked was rapidly accelerated. Both smoking and the cocktail habit were detrimental in diabetes. Tobacco amblyopia was a definite ill effect. One high authority had predicted a large increase of cancer of the buccal mucous membrane from the universal indulgence in cigarets.

The tobacco habit was discussed also at the fifth annual meeting of the National Society of Non-Smokers. In the annual report it was urged that smokers should be banned from places in which food is served and that restaurants should provide non-smoking rooms. Young men were giving up smoking because they thought it effeminate, but Boy Scouts and even Girl Guides had succumbed to the habit. The chairman, Dr. Pryns Hopkins, referred to the statement made in the report of the discussion of Dr. Rolleston's paper that smoking soothed the nerves. The fact was that smokers were very irritable people when unable to smoke. Smoking had a tendency to impair the moral faculties; smokers seemed to lose certain qualities of truthfulness and consideration for others.

Railway and Road Accidents Compared

The minister of health, Sir Hilton Young, speaking at an anniversary meeting of railway servants, said that 241 railway servants were killed and 17,997 injured in 1931 in the performance of their duties. But the number of passengers who were killed was only 76, while 5,000 were injured. These were remarkable figures for the passengers, considering the chances involved. They compared favorably with accidents on the roads, in which 7,000 were killed and 150,000 injured in the same year. He wished the public could be excited to take the same interest in automobile accidents they did in railway accidents.

Deaths from Injection Treatment of Varicose Veins

It is generally held that the risks of the injection treatment of varicose veins are small. However, a number of deaths from pulmonary embolism have been recorded. In his recent oration to the Harveian Society on pulmonary embolism, Sir Bernard Spilsbury, the government pathologist, reviewed 120 fatal cases in which he had made or assisted at a necropsy. In three of these, pulmonary embolism was due to the injection treatment of varicose veins—in two, sodium salicylate was used, and in 1, sodium morrhuate. Sir Bernard thought that the rarity of this complication was a testimony to the comparative safety of the method, as to which originally he had some misgivings. Another case has just occurred and been the subject of an inquest, at which the incorrect statement was made that it was the first in this country. A woman, aged 62, received an injection in her left leg for varicose veins at the

German Hospital, London. She had pain afterward and remained in bed for a week, after which she went about her ordinary housework. She suddenly became faint and was found sitting on a sofa and asking for water. She died before medical aid could be summoned. The necropsy showed that death was due to a tubular clot of blood in the heart, 3 inches long and three-eighths inch in diameter. The coroner criticized the usual practice of allowing patients to get about after injection of varicose veins. He thought that it would be much safer for them to rest until such time as the clot in the vein had dispersed.

PARIS

(From Our Regular Correspondent)

March 30, 1932.

Herpes Zoster and Chickenpox

The question of the possible identity of herpes zoster and chickenpox, as raised by Mr. Netter, was the subject of a recent discussion before the Société des médecins des hôpitaux de Paris. Mr. Armand Delille and Madame Trocmé reported an observation that has a bearing on the question. At the Hôpital Herold, these authors observed, October 12, in a tuberculous young girl undergoing pneumothorax treatment, who had been in the department since June, a thoracic herpes zoster of the eighth and ninth right dorsal roots. Exactly fifteen days later, October 27, two children, one in the neighboring cubicle, the other in the cubicle opposite, came down with a typical chickenpox. A third case of chickenpox developed the day following. This outbreak gave rise to a fourth case, fifteen days later. There had been no case of chickenpox in the department for more than a month. It was therefore considered reasonable to incriminate the case of herpes zoster as the cause of the cases of chickenpox. Netter also recalled similar cases of chickenpox in another hospital service, in children adjacent to a patient suffering from herpes zoster. Mr. Hallé confirmed this opinion, but Mr. Comby remained skeptical and advanced the theory that the contagion might have come from without, through visitors of the young patients. Mr. Apert stated that he had long held the same opinion as Mr. Comby, but that recent observations made in his department had served to change his point of view. Such happenings occur too often to be simple coincidences.

At a later session of the same society, the nervous disorders that are sometimes observed during chickenpox and that appear to show that the central nervous system is attacked, as is the case in herpes zoster, were discussed. Mr. Sendrall and Madame Dudevant reported a syndrome of choreo-athetosis that developed during convalescence from chickenpox. There appeared first a grave meningeal syndrome, followed by a paralysis of the lower limbs and motor disorders of a choreo-athetosic type, which attacked at the same time the muscles of the arms, the head and the trunk. These symptoms, however, retrogressed spontaneously and the patient recovered without sequels. In connection with this communication, Professor Marfan stated at the following meeting that, in 1893, he reported a case of chickenpox in a child, which was associated with complete paralysis of the left arm. He referred these nervous symptoms to the action of the virus of chickenpox, but his conclusions were at that time rather doubted. But now practically all the authors who have studied this question are of this opinion and accept the possibility of a neurotropic action of the virus of chickenpox. Marfan recalled also a case of ophthalmoplegia externa that he reported in 1898; also cases of atrophy of the quadriceps, which followed this disease. The author confirmed thus the possibility of nervous lesions associated with chickenpox. Further, Mr. Cathala reported a case of facial paralysis that developed twelve days after the onset of chickenpox and was accompanied by a slight weakness of the right leg, with abolition of the achilles reflex. The father of this young girl, likewise affected with chickenpox, presented two days later a monoplegia of the left arm. All these accidents were, however, transitory. Netter recalled that the observations of Professor Marfan are the first that were published on the question and emphasized that such accidents were usually of a benign nature. Mr. Paraf cited similar cases, and also Mr. Babonneix. Mr. Sézary pointed out that Déjerine had observed such facts but regarded them as rare. He holds that, just like the spirochete, certain viruses may evolve and present affinities that are more and more neurotropic.

The Law Pertaining to the Practice of Medicine

The text of the law pertaining to the practice of medicine in France, as passed by the senate, has been adopted without debate by the chamber of deputies. The provisions that present the greatest interest outside of France are the following: A physician must be a citizen of France and must possess a doctor's diploma in medicine, granted by the central government. Foreign countries in which physicians of French nationality are authorized to practice medicine may, however, demand of the French government diplomatic conventions relieving applicants "in certain cases" of the requirement of French citizenship. But a parity must be established between the number of physicians coming from countries with which conventions have been entered into, to practice medicine in France, and the number of French physicians practicing in those countries. The holders of a foreign diploma, certifying graduation as a doctor of medicine, who seek the doctor's degree granted by the French government must give evidence of possessing the credits required to enter on the course leading to the diploma certifying to adequate preparation in physics, chemistry and the natural sciences and must submit to an examination. They may not under any circumstances be relieved for more than three years of the obligation to submit such evidence. Foreigners holding a French "university diploma" in medicine will be subject to the same conditions, except as regards proofs of scholarship and the examinations. They may be relieved for four years of the necessity to submit evidence of scholarship. They may likewise be relieved of examinations, provided examinations do not in any case concern their knowledge of anatomy, physiology and the clinical subjects. No dispensations from examinations or from evidences of scholarship will be accorded to foreign students seeking a government doctor's diploma in medicine, irrespective of the length of time spent on studies in foreign countries. French naturalization will not be required of physicians who are regular practitioners of medicine in France the day of the promulgation of this law, provided they possess on that date the government doctor's diploma in medicine, nor of students who are taking a regular course of study leading up to such a diploma.

An American Gift to the University City in Paris

Mrs. Harriett Hale Woolley has made the University of Paris a gift of $50,000 for the upkeep of rooms in the American Dormitory, which Dr. Gage had erected in the University City, Boulevard Jourdan. The right to occupy these rooms will be reserved to the beneficiaries of the scholarships established by Mrs. Woolley.

International Congress on Urban Hygiene

The third International Congress on Technic and Urban Hygiene met recently in Lyons under the chairmanship of Dr. Tanon, professor of hygiene at the Faculté de médecine de Paris, the session continuing for a week. The first session was held in Prague, in 1930, and the second, last year, at Milan. At Milan, and also at Lyons, the congress met during the period that a large industrial and commercial exposition was held. Four hundred French and foreign delegates attended the congress, outside of the regular members. The first session was devoted to a presentation by Professor Greber on the importance of open spaces in laying out a large city,

together with the presentation of photographs of cities illustrating this point, notably American cities. Chomel spoke on the accomplishments in hygiene and city development, already achieved or begun, at Lyons; Augustin Rey, on the importance of securing for dwellings the maximal amount of sunlight; Mazel and Robin on the rôle of the physician in the vocational guidance of young persons to prevent occupational diseases; Trillat on the influence of fogs; Turlin on the illumination of large cities; Kiemplin on the smoke evil; Verbouwe of Brussels on the danger of massive emissions of factory smoke, with citation of the fatal accidents that occurred, two years ago, in the valley of the Meuse; Henry Ferré, on the sanitary advantages of cremation; Knepen, on the suppression of moisture in walls by his system of permanent drainage; Violle of Marseilles, on the disinfestation of houses and individuals; Loir of Havre, on the need of an international society for the destruction of rats; Rey, on the location of hospitals with reference to the sunlight.

The congress passed five resolutions: one on the importance of the direction in which houses face, from the standpoint of the best insolation; a second on the minimum floor space of rooms of dwellings; a third on the necessity of renovating periodically the façade of dwellings; a fourth on the ventilation of rooms and dwellings, and a fifth on the abolition of the smoke evil. An exhibit of sanitary equipment and sanitary documents added to the interest of the congress. There were various new installations from the city of Lyons, new abattoirs, animal markets, and especially the new city of Villeurbane, where a central heating plant furnishes heat for 1,800 apartments and steam for 100 factories. The city of Lyons, owing to the initiative of its mayor, Mr. Herriot, is probably the most enterprising city in France, from the standpoint of breadth of view and the organization of city projects.

The Excess of Physicians in France

The number of physicians in France continues to increase faster than the population. The total number is at present about 28,000. During the last year, 1,120 government diplomas have been conferred. It requires only a single arithmetical operation to foresee what the result will be in a few years. It may be considered that a physician practices, on an average, a period of thirty years. To maintain the present figure of 28,000, only 933 new graduates each year will be required, from which it appears that this year 187 more diplomas were issued than would be necessary to preserve the status quo. On the other hand, 1,120 graduates each year corresponds to a total of 33,600 physicians. However, the present total of 28,000 physicians constitutes, for the population of France, one physician for a little more than 1,400 inhabitants; while a total of 33,600, the figure toward which we are tending, represents one physician for less than 1,200 inhabitants. But since the present proportion is already too high, what will it be when the number of physicians shall reach 33,600? It should be noted also that, promotions having been more rapid in recent years, a larger proportion of the physicians are young practitioners, and for that reason the situation is more grave than it would be otherwise. It behooves the medical profession to give this question close attention. There are in France about 6,000 surgeon-dentists, and on every hand the syndicates of these practitioners are combating this overcrowding of their profession. While for the physicians an average career extending over thirty years may reasonably be assumed, it may be considered that, since the studies of the surgeon-dentists are begun at an earlier age and the studies are much less extensive, their opportunities to practice are just so much prolonged. Their practice will extend over a period of thirty-five years. Under these circumstances, in order to maintain the present total number of surgeon-dentists (6,000), 175 graduates annually would suffice, instead of 600, the present number. Six hundred graduates annually corresponds to 21,000 dentists, and one needs only to cite this figure to explain the grave error that has been committed, to which the medical profession should not remain indifferent. That is why limitation of the number of students to be admitted to the facultés is being seriously considered, as has been the case for some time in the large schools of technology.

Death of Prof. Charles Debierre

The death of Charles Debierre, professor of anatomy at the Faculté de médecine de Lille, at the age of 79 has been announced. He was the author of numerous scientific works, among which is "A Treatise on the Anatomy of Man," which has been translated into several languages. He had many brilliant pupils. In 1897 he was appointed corresponding member of the Academy of Medicine. In 1911 he was elected senator of the department of Nord, which post he held until his death. Up to the age of 75, his duties as senator in Paris did not prevent him from returning three times a week to the Faculté de médecine de Lille to lecture. In the senate, he was an earnest advocate of the policy of making a strong course in the classics a preliminary requisite for students of medicine.

BERLIN

(From Our Regular Correspondent)

March 21, 1932.

Professor Forssell and the Campaign Against Cancer

Prof. Gösta Forssell of Stockholm has, of late years, carried on, in a most praiseworthy manner, a crusade against malignant tumors. He and three of his assistants, Berven, Heymann and Reuterwall, addressed recently the Berlin Medical Society. A large body of foreign physicians attended the meeting.

Forssell spoke on the organization of the cancer crusade in Sweden; Berven on the radiologic treatment of cancer of the mouth; Heymann on the radiologic treatment of tumors of the female genitalia, and Reuterwall on the anatomopathologic experiences at the Stockholm radiologic institute, which was established by Forssell in 1910, and is known throughout the world as the Radium Hemmet (Radium Home). The speakers were listened to with great attention by the large audience. The Swedish ambassador was present. Geheimrat Goldscheider warmly welcomed the foreign guests and emphasized the friendly relations that have long existed between the Swedish and the German peoples.

In the cancer campaign in Sweden the chief emphasis is laid on radiation therapy, which is in keeping with the training of Forssell. Its main feature is the centralization and full utilization of the available supplies of radium. Here is the main difference between the Swedish organization and the German, but, at the same time, also the deeper reason why Germany cannot adopt in its entirety the excellent Swedish organization. The methods of irradiation that have been developed in Sweden are based on a considerable supply of radium in the absolute sense and large in comparison with the population of the country. Forssell's Institute in Stockholm has alone more than 5 Gm.; the institute of the University of Lund more than 2 Gm., and the new institute in Gotenburg about 2 Gm. That represents a cost of several million marks. Germany has not the funds with which to purchase any such amounts of radium and consequently has been forced to develop especially the technic of the hard roentgen rays in combating tumors. The Berlin institute of the university, in the Charité Hospital, under the direction of Ferdinand Blumenthal, has about 1 Gm. of radium, and the Werner-Siemens-Institut, in the Moabit Hospital, under the direction of Frik, has 0.2 Gm. With regard to the best utilization of the German supply of radium, doubtless much could be learned from Sweden. We have divided up our forces too much. In Sweden, the whole radium supply of the country

is collected in three places, where it works day and night in the campaign against cancer. Cancer patients have to go where the radium is—not the reverse. The Radium Hemmet was originally a research institute. Now it is a radiologic clinic which has beds for more than 1,500 patients annually, and, in addition, treats 8,000 outpatients. There is in Sweden, said Forssell, not a single village in which one or more cancer patients are not indebted to the Radium Hemmet or to one of its sister institutions. The central government pays the traveling expenses of needy patients, which necessitates the expenditure of about $25,000 annually. The most effective method of applying radium, in the opinion of these Swedish radiologists, is irradiation *à distance*, with filtered hard rays from the so-called radium cannon; but this method requires relatively large quantities of radium and can thus be successful only by means of centralization and economic utilization of all radium supplies. This point was emphasized repeatedly by the speakers —likewise the need of special cancer clinics and the special radiologic training of the physician, for which Germany has, to be sure, now made provision. The Swedes are not content with their supply of radium, and the large fund collected by popular subscription on the seventieth birthday of King Gustaf will enable them to increase it. At present there are in Stockholm 3 Gm. of radium available for treatment *à distance*. In addition, there are of course also the necessary roentgenologic apparatus and surgical assistance. The Swedish radiologist did not disparage the surgical method of treatment; on the contrary, he emphasized that in Sweden there were many excellently trained surgeons available for the treatment of cancer.

Berven discussed the technic and the excellent results in cancers of the mouth. The electrical production of heat within the cancer tissues (endothermy) is frequently resorted to as an aid to surgery. In gynecology, the results of the treatment discussed by Heymann are not so satisfactory. He reported, however, 20 per cent of permanent recovery (extending over more than five years) in statistics that were subjected to severe adjustment and that include numerous cases that were hopeless when treatment was first begun.

It was a thoroughly complete and reliable accomplishment that the Swedish scientists described at that evening session.

The Hormone of the Pars Intermedia of the Hypophysis

Prof. Bernhard Zondek, whose researches on the sexual hormone, in collaboration with Aschheim, have achieved great importance, spoke recently before the Kaiser-Wilhelm-Gesellschaft on the hormone of the pars intermedia of the hypophysis. He succeeded in isolating an almost pure specimen of the hormone and then performed experiments to determine the significance of the hormone. He obtained the best results in cold-blooded animals, particularly in Leuciscus phoxinus, a cyprinoid fish about the size of a sardine, found in German waters. With the hormone of the pars intermedia he was able to produce a red stain on the body of the fish. It is therefore a hormone that influences the metabolism of colors. A number of color changes that occur in human beings are well known. In certain diseases, dark shades or losses of color are observed; but, above all, it is known that, during pregnancy, stains appear on the body surface of the woman. Heretofore it has not been fully established what caused these changes. The discovery of the hormone of the pars intermedia of the hypophysis opens now possibly the way to get back of the secret of the metabolism of colors.

Lowering of the Fee Schedules

The economic distress in Germany has exerted a deep influence on the life of physicians. That private medical practice has suffered a terrible decline is not surprising to any one who is somewhat familiar with conditions, although it had previously been depressed by the extension of social insurance in Germany, during the years following the war. Under the influence of the wave of economy, Germany is seeking to make all possible retrenchments in order to protect itself against financial collapse. With the federal ministry of the interior and the federal ministry of labor, the federal commissioner for price control has entered into negotiations with the League of Physicians of Germany, the Deutscher Aerztevereinsbund and the Federal League of Dentists of Germany, concerning the question of lowering the fees for private medical and dental services. The negotiations resulted in the following agreement: The fees of the fee schedules of Prussia and the other states *(länder)* are to be made the basis for the determination of the fees of physicians and dentists. In evaluating their services, the physicians and dentists will consider the decreased purchasing power of the population, resulting from the changed economic conditions. The physicians and dentists reserve, however, the privilege, in particular cases, after previous expressed understanding with the patient, if his financial condition permits, of departing from these fee schedules. Local fee schedules established by medical and dental societies may be retained in force only after they have been revised and the fees have been reduced by at least 10 per cent, as against those of 1931. Furthermore, it must be recognized that the minimum fees of the local schedules may be shaded. The so-called chambers of physicians and chambers of dentists (in the absence of such chambers, the medical or dental societies) are establishing, if they have not previously existed, arbitration centers, where protests of patients against the fees charged them may be heard. In considering the nature and tone of these regulations, which certainly appear necessary, under the circumstances, one cannot help but regret in retrospect that the medical profession, which in the main offers and represents ethical values, has been drawn into the daily struggle of economic life, to such an extent.

TURKEY

(From Our Regular Correspondent)

Ankara, March 30, 1932.

Foreign Physicians in Turkey

According to the medical practice act of 1928, no one may practice in any form unless he is a Turkish subject and has a diploma from the Turkish medical school or from a foreign medical school recognized by the government.

According to article 77 of the present law, only those physicians, surgeon-dentists, dentists and midwives of foreign nationality who can produce official evidence to the effect that they have practiced medicine in Turkey before 1914 are according to the Lausanne treaty of 1923 permitted to continue to practice. Therefore a foreign physician desiring to practice medicine in Turkey qualifies by becoming a Turkish subject. Following application to this effect, the applicant comes before a jury for investigation. If it has been ascertained that the diploma is a true one and is the property of the applicant, and if the jury is convinced that he is a physician, a license is issued without further examination.

A foreign physician holding a teaching position at a government institution is not permitted to engage in private practice but may be called on for consultation. The intention to call a foreign physician for a teaching position led to the passing of a special law in December, 1930, reading as follows: On condition that he does not engage in private practice but practices medicine only on the inmates of the hospital clinics of the said institution, a foreign specialist physician may be appointed for a period of four years to direct the Gülhane Hospital, the postgraduate school for army physicians, where at the same time he is to lecture on military medicine.

Influenza in Asia Minor

With the beginning of the new year, influenza appeared. Reports from all parts of the country, especially the big cities, showed that on account of the epidemic all schools were closed for two weeks. At first, complications were negligible, but they soon became serious and increased the fatality rate. It was at first thought best to close all motion picture houses, but they remained open and were mainly responsible for the spread of the disease; also, it was Ramazan, the month of the fast preceding the Bayram, when for thirty days believers abstain from food or drink from sunrise to sundown and go to the mosque for prayer. It was also at that time that the Koran was first read in Turkish instead of Arabic, which is quite an event. The people flocked into the great mosques by tens of thousands every night. Furthermore, unusually cold weather prevailed at this time.

The Incidence of Rickets in Infants

As the result of an investigation into the incidence of rickets in infants, Prof. Dr. Ihsan Hilmi of the Chichli children's hospital in Istanbul points out that his investigation in Ankara, Kayseri and Istanbul revealed a relatively high incidence of rickets in city infants. Faulty nutrition is mainly responsible for this condition. Infants generally develop well during the first six months, but after that time, owing to the fact that the infant is still kept on milk only and the diet is devoid of vitamins and minerals, rickets soon develops. As a rule, during the first and second year the child receives milk and in addition a carbohydrate pudding. Among the poor, the infant is for economic reasons often kept on breast milk long beyond the required time. The age limit of the children studied in this investigation was 2 years; they were mostly brought to the hospital dispensary for advice concerning diet or because they were restless, sleepless or unmanageable or showed other signs of irregular feeding. In all, 3,797 children were studied, 2,060 boys and 1,737 girls. The accompanying table shows the incidence of rickets according to age and sex.

Incidence of Rickets

Age	Boys			Girls		
	Healthy	Rickets	Total	Healthy	Rickets	Total
0- 6 months { 0- 3 months	232	27	259	197	7	204
0- 6 months { 3- 6 months	177	71	248	171	37	208
6-12 months { 6- 9 months	158	107	265	120	67	187
6-12 months { 9-12 months	117	225	342	142	155	297
12-18 months	296	303	599	244	294	538
18-24 months	213	134	347	163	140	303
Total (0-2 years)	1,193	867	2,060	1,037	700	1,737

Expressed in percentages, of infants up to 3 months of age, 10.2 per cent boys and 3.5 per cent girls had rickets; from 3 to 6 months, 28.6 per cent boys and 17.8 per cent girls; from 6 to 9 months, 40.3 per cent boys and 35.8 per cent girls; from 9 to 12 months, 65.8 per cent boys and 52.1 per cent girls; from 12 to 18 months, 51.0 per cent boys and 54.6 per cent girls; from 18 to 24 months, 38.0 per cent boys and 46.2 per cent girls; of all infants up to 2 years, 39 per cent of the boys had rickets and 35 per cent of the girls. The fact that rickets is more often seen in boys is due in part to the fact that the uneducated mothers still cling to the old custom of keeping boys on breast milk longer than girls, often until they are 2 years old. This study has also revealed that relatively few mothers (17 per cent) know what rickets is and what bearing it has on the development of the child. Out of 1,507 children having rickets, 266 were brought to the dispensary because the mother thought that the child was probably having rickets, 389 were brought to the dispensary because they were weak, anemic or suffered from loss of appetite, and 912 were brought for other reasons. Consequently the disease was already in a more or less advanced state. Because rickets had already become chronic and the infants were suffering from another disease in need of urgent treatment, the treatment for rickets could not always be started immediately. In 428 cases, or 27.3 per cent, urgent treatment was needed for disease other than rickets; in 1,076 cases, or 68.6 per cent, treatment for rickets was immediately started, and in 63 causes, or 4 per cent, treatment for rickets was given along with treatment for other diseases. Though the mothers were asked to bring the children at regular intervals and the need of their cooperation was explained to them, 995, or 63.5 per cent attended but once; 307, or 19 per cent, twice; 117, or 7 per cent, three times; 57, or 3 per cent, four times; 40, or 2.5 per cent, five times; 16, or 1 per cent, six times, and only a few seven, eight or nine times.

RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1932.

Tuberculin Tests in Children Vaccinated with B C G

In a recently published article, Dr. A. de Carvalho of Rio de Janeiro reports on 723 intradermal reactions with large doses of tuberculin (up to 1 mg.) in 661 infants, from birth up to the age of 36 months, who had previously received the B C G vaccine by oral administration, in order to determine the presence of allergy to tuberculin in those infants. The general results confirmed the previous experience of the author. The reactions gave positive results in 582 tests (80.5 per cent); the results were negative in 119 tests (16.4 per cent), and there were doubtful results in 22 tests (3.1 per cent). The positive reactions seemed to be caused by the action of the B C G bacillus, because they occurred in vaccinated infants who did not live in a tuberculous environment. In the group of infants who lived among tuberculous persons, the percentage of positive results may be compared to that given by the first group (group without contact with tuberculous persons). However, there was a larger number of positive reactions among infants in the first group than among those in the second group. Allergy to tuberculin caused by the first vaccination with the B C G vaccine has an average duration of eighteen months.

Identification of Leptospira from Man and from Rats

Dr. L. Salles Gomes, in a lecture before the Sociedade de Medicina e Cirurgia of São Paulo reported two cases of Weil's disease, previously observed by Drs. J. T. Piza and A. Ayrosa in Brazil. In these cases, the diagnosis was confirmed by histopathologic studies and by experimental inoculation. The author also reported a case of Weil's disease in which, after confirmation of the diagnosis, he succeeded in isolating the organism Leptospira icterohaemorrhagiae (Inada and Ido's type). He used the semisolid culture medium advised by Noguchi. The material from which cultures were to be made was collected by puncture from the kidney of guinea-pigs, previously inoculated with blood from the patient. All the culture tubes that were left at room temperature did not present any growth, while the culture tubes left at a temperature of 37 C. (98.6 F.) presented, on the eighth day, pure cultures of the spirochete. The author stated that in 1929 he also succeeded in isolating from wild rats of Sorocaba a type of Leptospira that is pathogenic for guinea-pigs. The genus was identified from culture tubes left at room temperature. He called the attention to the fact that Leptospira from rats could be identified from culture tubes left at room temperature, while, in order to identify the same genus from human blood, it was necessary to leave the culture tubes at a higher temperature: 37 C. (98.6 F.). He showed fresh smears of the organism with the darkfield, as well as histologic slides from the kidney and liver of experimentally infected guinea-pigs, which organs contained a large number of leptospiras stained by Levaditi's method.

Marriages

GEORGE COURTENAY GLASS, JR., Hartford, Conn., to Miss Gladys Boardman of New Haven, April 16.

WILLIAM R. JOHNSON to Miss Naomi L. Allen, both of Baltimore, at Alexandria, Va., March 2.

JAMES QUINN DORGAN, Columbus, Ohio, to Miss Viola Margaret Hall of Hines, Ill., April 14.

RICHARD T. MCMURTY to Miss Pauline Jett, both of Covington, Ky., April 15.

EUGENE B. ELDER, Knoxville, Tenn., to Miss Frances Williams, recently.

Deaths

Arthur Carl Heublein ⊕ Hartford, Conn.; Columbia University College of Physicians and Surgeons, New York, 1902; member of the American Roentgen Ray Society, New England Roentgen Ray Society, Radiological Society of North America, American College of Radiology and the American Radium Society; roentgenologist to the Hartford Hospital; aged 52; died, April 7, of bronchopneumonia and myocarditis.

William Stephenson ⊕ Colonel, U. S. Army, retired, New York; College of Physicians and Surgeons in the City of New York, 1880; entered the army as an assistant surgeon in 1883; veteran of the Spanish-American War; was promoted through the various grades to that of colonel in 1912 and was retired in 1919, by the President, being 62 years of age; aged 76; died, April 17, of cerebral hemorrhage.

Goldye L. Hoffman, Chicago; University of Illinois College of Medicine, Chicago, 1915; member of the Illinois State Medical Society; associate in gynecology at her alma mater; president of the Medical Women's Club of Chicago; on the staffs of the Iroquois Memorial and Emergency hospitals and the Research and Educational Hospital; aged 38; died, April 17, of pneumonia.

Julius Kangisser, St. Joseph, Mo.; St. Louis University School of Medicine, 1912; member of the Missouri State Medical Association; served during the World War; aged 46; on the staffs of St. Joseph's Hospital and the Missouri Methodist Hospital, where he died, March 25, of sepsis following perforation of the intestine.

Harvey Charles Maurer, Beloit, Wis.; State University of Iowa College of Medicine, Iowa City, 1905; member of the State Medical Association of Wisconsin; served during the World War; on the staff of the Beloit Municipal Hospital; aged 49; was found dead in his garage, April 7, of carbon monoxide poisoning.

Robert Menzies Mitchell, Weyburn, Sask., Canada; Trinity Medical College, Toronto, Ont., 1892; past president of the Saskatchewan Medical Association; member of the American Psychiatric Association; formerly superintendent of the Weyburn Mental Hospital; aged 66; died in February.

Louise H. Rainey Grieve, Westerleigh, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, 1893; for seven years a medical missionary in India; aged 68; died, March 4, in the Staten Island (N. Y.) Hospital, of chronic fibrous tuberculosis and myocarditis.

Allen Lawrence Lear, Sewanee, Tenn.; University of the South Medical Department, Sewanee, 1908; member of the Tennessee State Medical Association; for many years on the staff of the Emerald-Hodgson Memorial Hospital; aged 45; died suddenly, April 2, of heart disease.

Bessica Faith Curtis Medlar Raiche, Santa Ana, Calif.; Tufts College Medical School, Boston, 1903; member of the California Medical Association; past president of the Orange County Medical Society; aged 57; died, April 10, of an accidental overdose of a sedative.

Irvin Ebaugh, Baltimore; University of Maryland School of Medicine, Baltimore, 1889; formerly professor of materia medica and therapeutics at his alma mater; aged 70; died, April 15, of hypertension, cardiovascular disease and embolus with infarction of the lung.

Wilda Edwin Butler, Hamden, Conn.; Hahnemann Medical College and Hospital of Philadelphia, 1897; member of the Connecticut State Medical Society; for many years on the staff of the Grace Hospital, New Haven; aged 61; died, April 12, of thrombosis.

Charles Rees Palmer, West Chester, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; member of the Medical Society of the State of Pennsylvania; aged 62; on the staff of the Homeopathic Hospital, where he died, April 6, of heart disease.

Ozias Boynton Gould, Utica, N. Y.; University of Vermont College of Medicine, Burlington, 1877; member of the Vermont State Medical Society; aged 78; died, February 21, of carcinoma of the intestine and intestinal obstruction.

William Joseph Gorey, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1919; member of the Ohio State Medical Association; aged 37; died, April 14, in the Grant Hospital, of abdominal carcinomatosis.

Pauline Myers Townsend Hanson, Marshalltown, Iowa; Woman's Medical College and Hospital of Philadelphia, 1895; aged 66; died, April 5, in the Mary Thompson Hospital, Chicago, following an operation for carcinoma.

Thomas Martin Hays, Santa Anna, Texas; American Medical College, St. Louis, 1887; member of the State Medical Association of Texas; on the staff of the Sealy Hospital; aged 66; died, January 18, of heart disease.

Lincoln E. Penny, St. Paul; Hahnemann Medical College and Hospital, Chicago, 1885; for many years on the staff of the Ancker Hospital; aged 72; died, March 28, in St. Luke's Hospital, of hemorrhage of the stomach.

Hiram Ansley Fulton, Eau Claire, Wis.; Milwaukee Medical College, 1901; served during the World War; aged 54; died, April 5, in the Sacred Heart Hospital, of chronic myocarditis and cirrhosis of the liver.

George David Parker, Houston, Texas; Kentucky School of Medicine, Louisville, 1888; member of the State Medical Association of Texas; served during the World War; aged 69; died, March 26, of myocarditis.

Elon B. Gilbert ⊕ Geneseo, Ill.; Jefferson Medical College of Philadelphia, 1885; formerly president of the board of health of Geneseo; on the staff of the J. C. Hammond City Hospital; aged 72; died in April.

Ettore Varvaro, Clifton, N. J.; Royal University of Naples Faculty of Medicine and Surgery, Naples, Italy, 1896; aged 61; died, March 23, in St. Joseph's Hospital, Paterson, of cerebral hemorrhage.

Virgil Wilson Leggett, Hobgood, N. C.; University of Louisville (Ky.) School of Medicine, 1914; aged 42; died, March 26, at the Norfolk Naval Hospital, Portsmouth, Va., of acute endocarditis.

Ivus Irvin Richmond ⊕ East Bridgewater, Mass.; Harvard University Medical School, Boston, 1902; member of the school board; aged 62; died, April 8, in a hospital at Brockton, of pneumonia.

William McSpadden Copenhaver ⊕ Helena, Mont.; University College of Medicine, Richmond, Va., 1900; on the staffs of St. Peter's Hospital and St. John's Hospital; aged 56; was drowned recently.

Charles B. Murphy, Mannsville, Okla.; Ensworth Medical College, St. Joseph, Mo., 1897; aged 63; died, March 22, of injuries received when the automobile in which he was driving overturned.

Leonard Woods Atkinson, Patton, Calif.; Boston University School of Medicine, 1884; member of the California Medical Association; aged 72; died, February 27, in the Patton State Hospital.

George D. Thomas, Meadville, Pa.; Jefferson Medical College of Philadelphia, 1890; member of the Medical Society of the State of Pennsylvania; aged 77; died, February 18, of arteriosclerosis.

James Harvey Bissell, Troy, N. Y.; Albany Medical College, 1887; member of the Medical Society of the State of New York; aged 75; died, April 8, in the Leonard Hospital, of pneumonia.

John Lawson Felder, San Antonio, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1904; member of the State Medical Association of Texas; aged 49; died, January 16.

Newell Eddy Lavely ⊕ Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1920; aged 39; died in April of lobar pneumonia, pericarditis and pulmonary embolism.

Alexander Armstrong ⊕ White Haven, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1895; aged 58; died, April 6, in the Pennsylvania Hospital, Philadelphia, of uremia.

Adolphus B. Frame ✠ Piqua, Ohio; Medical College of Ohio, Cincinnati, 1868; Civil War veteran; on the staff of the Ball Memorial Hospital; aged 92; died, April 11, of angina pectoris.

William Erastus Smith, Whittier, Calif.; American Medical College, St. Louis, 1892; served during the World War; aged 61; died, February 25, in a hospital at Los Angeles, of uremia.

Edmund Peter Arens, Detroit; St. Louis University School of Medicine, 1908; aged 49; died, April 2, in the Deaconess Hospital, of carcinoma of the prostate and uremia.

Walter B. Stewart, Joliet, Ill.; College of Physicians and Surgeons of Chicago, 1888; member of the Illinois State Medical Society; aged 66; died, April 15, of cerebral hemorrhage.

Raymond Johnson, Worthington, Ind.; Indiana University School of Medicine, Indianapolis, 1916; aged 42; died, March 30, in the Freeman Greene County Hospital, Linton, of uremia.

Elisha Sheperd Boland, Boston; Medical College of Ohio, Cincinnati, 1877; an affiliate Fellow of the American Medical Association; aged 81; died, April 7, of chronic endocarditis.

James Edwin Mead, Detroit; Detroit College of Medicine, 1899; member of the Michigan State Medical Society; aged 58; died, April 17, in Traverse City, Mich., of pneumonia.

Sanford Lammie Givan, Spring Lick, Ky.; University of Louisville School of Medicine, 1893; formerly member of the state legislature; aged 74; died, April 2, of heart disease.

George Pendleton Dale ✠ Dayton, Ohio; Miami Medical College, Cincinnati, 1900; aged 58; for many years on the staff of the Miami Valley Hospital, where he died, March 20.

Arden Thomas McKinney, Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1909; member of the Arkansas Medical Society; aged 51; died, March 17.

Denwood Nowal Livingston Newbury, Spokane, Wash.; Columbia University College of Physicians and Surgeons, New York, 1896; aged 65; died, January 31, of heart disease.

Andrew C. Biehn ✠ Quakertown, Pa.; Jefferson Medical College of Philadelphia, 1893; on the staff of the Quakertown Hospital; aged 63; died, April 11, of secondary anemia.

Lewis C. Knapp ✠ Monroe, Mich.; University of Michigan Medical School, Ann Arbor, 1891; aged 64; died, in April, at the University Hospital, Ann Arbor, of pneumonia.

Michael F. McMeel, Clinton, Iowa; College of Physicians and Surgeons, Keokuk, 1893; formerly county coroner; aged 63; died, April 10, of acute dilatation of the heart.

Calvin R. Johnson, Eminence, Ky.; Miami Medical College, Cincinnati, 1877; for many years member of the board of education; aged 77; died, April 3, of pneumonia.

Joseph P. Craney, Denver; Medico-Chirurgical College of Philadelphia, 1902; member of the Colorado State Medical Society; aged 56; died, April 8, of heart disease.

Abraham Lincoln Cothran ✠ San Jose, Calif.; University of California Medical Department, San Francisco, 1893; aged 66; died, February 23, in the San Jose Hospital.

William Harter McGrew, La Fontaine, Ind.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1872; aged 84; died, March 30, of bronchopneumonia.

William L. Wallace, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1896; member of the Tennessee State Medical Association; aged 63; died, March 13.

Merrill Maitland Myers, Des Moines, Iowa; Rush Medical College, Chicago, 1918; member of the Iowa State Medical Society; aged 40; was drowned, March 26.

Joseph Rothkowitz, New York; Cornell University Medical College, New York, 1906; aged 47; died, March 25, of coronary thrombosis and angina pectoris.

Arthur A. Woods, Los Angeles; Miami Medical College, Cincinnati, 1876; formerly health officer of Erie, Pa.; aged 76; died, April 12, of bronchopneumonia.

William Porter Fears, Lufkin, Texas; University of Louisiana Medical Department, New Orleans, 1870; Civil War veteran; aged 88; died, March 18.

James Gratton Kennedy, Elk City, Kan.; Jenner Medical College, Chicago, 1898; served during the World War; aged 67; died, March 29, of pneumonia.

John C. Owens, Plainfield, Ill.; Syracuse University College of Medicine, 1881; aged 75; died, April 2, in Detroit, of diabetes mellitus and myocarditis.

Annie May Cheney Spofford, Batavia, N. Y.; University of Buffalo School of Medicine, 1898; aged 58; died, April 11, in St. Jerome's Hospital, of uremia.

James Weston Miller, Santa Paula, Calif.; Rush Medical College, Chicago, 1884; aged 73; died, in March, of chronic interstitial nephritis and uremia.

Earl Chalmers Ford, Knoxville, Tenn.; University of Louisville (Ky.) School of Medicine, 1919; aged 42; died, April 12, of heart disease.

Lewis E. McBride, Franklin, Pa.; Chicago Homeopathic Medical College, 1895; on the staff of the Franklin Hospital; aged 62; died, March 15.

Edgar Melville Hatton, Orlando, Fla.; Starling Medical College, Columbus, 1892; aged 80; died, March 20, in a local hospital, of nephritis.

A. A. Maynard, Kerr, N. C.; College of Physicians and Surgeons, Baltimore, 1885; aged 72; died, April 4, in a hospital at Fayetteville.

William J. Grimes, East Liverpool, Ohio; Starling Medical College, Columbus, 1886; aged 74; died, March 31, of cerebral hemorrhage.

Dickerson H. Welling, Worthington, Ohio; Eclectic Medical Institute, Cincinnati, 1878; Civil War veteran; aged 84; died, March 18.

James Henry Kimball, Wakefield, Mass.; Harvard University Medical School, Boston, 1867; aged 87; died, March 30, of arteriosclerosis.

John Cantrell Bynum, Mountain View, Calif.; College of Physicians and Surgeons of St. Joseph, Mo., 1880; aged 84; died, February 23.

Samuel Ross Miller, Bismarck, Ill.; Rush Medical College, Chicago, 1878; aged 82; died, March 20, in La Fera, Texas, of senility.

David E. Hills, Fife Lake, Mich.; Detroit College of Medicine, 1900; postmaster; aged 59; died, March 27, of cerebral hemorrhage.

Sarah Ann Emery Allison, Money Creek, Minn.; Hahnemann Medical College and Hospital, Chicago, 1886; aged 89; died, March 15.

Fred Arthur Cozad, Powersville, Mo.; St. Louis College of Physicians and Surgeons, 1896; aged 57; died, March 20, of heart disease.

Frank E. P'Pool, Socorro, N. M.; University of Nashville (Tenn.) Medical Department, 1878; aged 76; died, March 7, of pneumonia.

John Marshall Williamson, San Francisco; University of California Medical Department, 1885; aged 70; died, April 2, of leukemia.

Everett Douglas Rodgers, Chicago; Miami Medical College, Cincinnati, 1884; aged 71; died, April 16, of chronic myocarditis.

Richard Haehl, Stuttgart, Germany; Hahnemann Medical College and Hospital of Philadelphia, 1898; aged 59; died, February 7.

J. Romeo Gauthier, McLennan, Alta., Canada; School of Medicine and Surgery of Montreal, Que., 1906; aged 49; died, in March.

Adah Leona Collison ✠ Seattle; Woman's Medical College of Pennsylvania, Philadelphia, 1915; aged 59; died, March 4.

Charles Atkinson Winans, San Francisco; Bellevue Hospital Medical College, New York, 1888; aged 67; died, February 13.

Frank D. Walsh, Guelph, Ont., Canada; Bellevue Hospital Medical College, New York, 1890; aged 63; died, April 9.

Peter Francis Gunster, Amity, Ore.; Bellevue Hospital Medical College, New York, 1871; aged 84; died, January 22.

Mary Weeks Burnett, Los Angeles; Hahnemann Medical College and Hospital, Chicago, 1879; aged 89; died, February 12.

William H. Krieger, Dayton, Ky.; American Eclectic Medical College, Cincinnati, 1887; aged 85; died in March.

John Lynn Pratt, Milford, Del.; Jefferson Medical College of Philadelphia, 1894; aged 68; died, March 14.

George E. Dienst, Aurora, Ill.; National Medical College, Chicago, 1898; aged 74; died, April 10, of senility.

Hugh Thomas Walker, Riceville, Iowa; Rush Medical College, Chicago, 1889; aged 82; died, March 10.

Alexander Gilfillen, Russellville, Ohio; Medical College of Ohio, Cincinnati, 1876; aged 81; died, March 15.

Elisha Bishop, Turners Station, Ky.; Miami Medical College, Cincinnati, 1879; aged 83; died, March 17.

Andrew Crawford, Scottsbluff, Neb.; Omaha Medical College, 1888; aged 80; died, February 14.

Correspondence

NITROUS OXIDE-OXYGEN-ETHER EXPLOSION

To the Editor:—The article by Dr. Carl R. Steinke on this subject (THE JOURNAL, April 9, p. 1267) interests me because of the deductions drawn from the explosion occurring, Nov. 11, 1926.

"This particular explosion might have been due to sparks resulting from discharges of static electricity. However, it is believed there was a small leak in the breathing tube." Competent anesthetists know that ether-oxygen mixtures, especially when enclosed, are explosive. There is always exhalation of ether and oxygen (with ethylene or nitrous oxide, if added) through an exhaling valve in all anesthetics, and intelligent prevention of such accidents will not be found in the periodic inspection of all electrical equipment or gas machines but in the use of common sense. Such anesthesia should never be used in the presence of electrical equipment. There is no field for ether enclosed anesthesia in an x-ray room at any time. The best is nitrous oxide only.

W. V. CHALMERS-FRANCIS, M.D., Los Angeles.
Chief of Anesthetists' Staff, Hospital
of the Good Samaritan.

STERILIZATION OF FABRICS IN HOSPITALS

To the Editor:—I have read with considerable interest an article entitled "The Importance of More Adequate Sterilization Processes in Hospitals" by Dr. Walter E. Dandy and published in the *Bulletin of the American College of Surgeons* (16:11 [March] 1932).

Permit me to call attention to the following statement, printed in italics, in his contribution: "Sterilization for one hour under a constant pressure of not less than twenty pounds is therefore the minimum that will assure destruction of all organisms." Later he states that every sterilizer should be equipped with two instruments, one for recording the time and the temperature of the chamber of the sterilizer during the entire period of sterilization, and the other one for recording the pressure curve during the entire period of sterilization. The latter statement, concerning temperature, is the one which might better have been put in italics.

It is a common fallacy, which has been perpetuated by the manufacturers of sterilizers, that the pressure within the sterilizer is the criterion by which the efficacy of the sterilizing process should be measured. It is obviously possible to have a pressure of a thousand pounds and have no sterilization result because the temperature might be at zero. The pressure in the sterilizer is simply used to cause a higher temperature by the compression of live steam.

The great danger in steam sterilization is that the steam admitted to the chamber may not be 100 per cent steam but may be mixed with air. Under these conditions, one may obtain the required pressure without obtaining the required temperature. In order to have a sterilizer filled with pure steam, it is necessary either to exhaust the chamber as many as five or six times during the sterilization or to have the sterilizer equipped with an automatic device for eliminating air and water of condensation. While it is true that a satisfactory temperature will not be reached unless from 17 to 20 pounds of pressure is applied to the sterilizer, the pressure of itself is of no significance. The latest type of bacteriologic sterilizers are equipped with thermometers, and it is unfortunate that pressure gages were ever provided for hospital sterilizers except to indicate the safety point for the steam pressure. It is obvious, therefore, that a record of the pressure curve is without significance, for the record of the temperature curve is all that is important.

As a matter of fact, the arbitrary period of one hour of sterilization, in practice in the Mayo Clinic for years, is really unnecessary if the sterilizers have been properly packed, and it is equally true that it is possible to pack a sterilizer in such a way that even an hour will be insufficient time for sterilization. The important point in hospital sterilization is that an adequately trained, conscientious supervisor should see to it that each item going into the operating room has been carefully and conscientiously sterilized and that at *irregular* intervals bacteriologic supervision is given to operating room equipment. Even these precautions will not take care of the many personal factors introduced into an operation by the surgeon and his assistants, and the practice of the most ideal methods of sterilization will not relieve the surgeon of the responsibility which he personally has in protecting his patient against operating room infections.

T. B. MAGATH, M.D., Rochester, Minn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PROGNOSIS AND TREATMENT IN NEPHRITIS

To the Editor:—During my third year of medical school I had scarlet fever and was in a hospital for contagious diseases under a regimen of rest and diet for six weeks. I now have a considerable amount of albumin in my urine, plus hyaline casts. My blood pressure is 140 systolic and 90 diastolic. My heart is normal in size but the pulse rate is 85 while at rest. There is a moderate amount of nocturia, averaging once during the night. There has been no edema or any other signs or symptoms. I am 29, 6 feet 2 inches (188 cm.) in height, and weigh 225 pounds (102 Kg.). I seem to be in perfect health but have been recently turned down by the government because of my urinalysis and blood pressure. I should like to know what my prognosis is as regards length of life, first, with a normal everyday average diet; second, with a protein poor and salt poor diet; third, with a very strict nephritis diet. Please advise me what functional tests are necessary to a further study of my condition. Please omit name.

M.D., California.

ANSWER.—The type of nephritis here described seems to be acute glomerulonephritis. Not many of these cases become chronic, complete recovery in the greater number occurring in the course of several months. If scarlet fever occurred recently, the prognosis for recovery is good. A blood pressure of 140 systolic is hypertension in a young person. The most important factors in treatment demand a certain amount of rest daily, preferably after meals, and abstinence from more than the ordinary strain of everyday life. Exercise beyond short walks should not be indulged in at this time. There is no necessity for protein restriction unless the nonprotein nitrogen of the blood exceeds 50 mg. per hundred cubic centimeters of blood. Even under these circumstances there should be only a slight reduction in protein intake. In fact, when a large amount of albumin is passed, it is often advisable to increase the protein intake. However, for one of this weight a restriction in the total intake of food leading to a loss of weight is to be recommended. Recent work by various investigators has shown that a salt free diet has its place in nephritis with edema and myocardial insufficiency, but not in glomerulonephritis. A low salt intake is preferable. As bouillons, spices and condiments are generally quite salty, and act mainly as stimulants to the appetite, they should be avoided.

There are two relatively simple tests of functional activity of the kidney, the one an estimation of the nonprotein nitrogen of the blood, already mentioned, and the other a urinary concentration test. The latter may be carried out in several ways. The method recommended here has the advantage of combining a dry and a wet period. No food or fluid is taken after dinner at 6 p. m. Urine thereafter is collected in separate containers until 10 o'clock the following morning, at which time from 1,000 to 1,500 cc. of water is taken. The urine is again collected for several hours in separate containers. The small quantities with higher specific gravities, reaching to 1.028 or 1.030, are obtained in the night and morning. Following the intake of the water, amounts reaching to 300 or 400 cc. with a specific gravity as low as 1.005 are not uncommon. With impaired renal function there is a tendency toward fixation of specific gravity and amount of urine passed during the whole period. This test

may be combined with the administration of phenolsulphonphthalein at the time of the intake of the water. A more complicated test is the one of measurement of urea concentration. A description of this can be found in Addis's recent book on nephritis or in any other recent textbook.

ECZEMATOID ERUPTION OF FINGERS

To the Editor:—I have a patient, an unmarried woman, aged 27, who has seen many noted physicians for a peculiar eruption of the fingers. It begins on the palmar surface and extends almost to the fingernail. There is no itching but there is a scaling of the surface. It begins as blisters and ends in scales. The patient is a typist and had to quit once because of soreness. She had spots of alopecia of the head and last September began with amenorrhea, which lasted until the latter part of December. The treatment I gave her was anterior pituitary, 1 cc., two times a week and solution of pituitary, 1 cc., once a week. After the second dose she menstruated normally and has since. The condition of the fingers has practically cleared up. The spots of alopecia are covered with hair, but this week she has had a relapse and the eruption is worse than ever. The patient should have menstruated two days ago but has not done so. The physical condition is otherwise normal. Can you give me any suggestions? Treatments first began about Dec. 15, 1931.

M.D., California.

ANSWER.—The eruption on the fingers has nothing to do with the endocrine disturbance except secondarily. It is probably an eczematoid ringworm, a dermatitis venenata from something in the environment, or an eczema. In any of these cases the improvement consequent to the endocrine therapy may have had something to do with clearing up the skin. The recurrence may be due to the fact that the patient has again touched something to which she is sensitized, to some change in the relation between the ringworm and its environment, or to lowered resistance on her part. The roofs of some of the vesicles should be searched for a fungus in 10 per cent potassium hydroxide solution, the slide being kept in a humidor and examined repeatedly for seventy-two hours before the search is given up. If a fungus is found, treatment should be given with mild Whitfield ointment, 2 or 3 per cent salicylic acid, twice as much benzoic acid, and ointment of rose water to make 100 per cent, applied at night and as often as possible during the daytime. If no ringworm infection can be found in the fingers but it is present between the toes, the Whitfield ointment can be tried cautiously, being used at first for several hours before retiring, to guard against irritation while the patient is asleep. If no proof of fungous infection is found, crude coal tar and zinc oxide, 6 per cent of each in petrolatum, may be tried. This is applied at night, cotton gloves being worn over it. The ointment should be removed in the morning with oil or with ointment of rose water. Soap should be avoided as much as possible. As the eruption improves, zinc oxide ointment should be alternated with the tar ointment. If the latter gets on the clothing, the spot should be soaked in oil or kerosene before washing.

POSSIBLE ANGINA PECTORIS FOLLOWING SHOCK OF EXPLOSION

To the Editor:—A man, aged 55, apparently well, was standing on the sidewalk when an explosion in the street some 25 feet distant occurred. He was knocked down by the force of the explosion and was not struck by any object. He was taken to the office of a physician, where a condition similar to, or identical with, angina pectoris developed. Five weeks later he died with this cardiac pain. Is angina pectoris ever of traumatic origin, and what is the probable cause of death when a patient dies under circumstances similar to those in this case, violence being produced by what may be termed indirection? Any assistance along this line would be appreciated.

EDWIN B. WALSTON, M.D., Des Moines, Iowa.

ANSWER.—Anginal pain is considered by the majority of observers to be due to an ischemia of the heart muscle. This deficiency in blood supply could be due to a thrombosis or an embolus obstructing a coronary vessel, anatomic changes in the walls of the coronary vessels, or to vasoconstriction of the coronary vessels.

Information is lacking as to just what biochemical factors predispose to thrombosis. There is some reason to think that anatomic nervous impulses can change the ratio of the various salts and proteins of the blood. Any theory, however, explaining why the sudden shock should cause changes resulting in a coronary thrombosis would be more ingenious than scientific. The same applies to an embolus, which has also the law of probability against it.

A coronary vasoconstriction has been assumed to result reflexly from other pathologic conditions in the chest, as when anginal attacks have followed on a bullet wound of the mediastinum with a bullet embedded there, or mediastinal tumors. Here there was no actual trauma.

A fall in blood pressure might reduce the coronary flow sufficiently to cause pain, in cases predisposed by pathologic changes in the coronary vessels.

Reflex vasoconstriction from nervous or emotional causes has never been actually proved, but there is abundant clinical evidence suggesting that fright, excitement, anger, worry or any emotion can cause such a vasoconstriction. A vasoconstriction could supposedly result in sufficient ischemia to cause a ventricular fibrillation and death.

Any explanation cannot be more than theoretical and unsatisfactory in the light of present knowledge.

SENSITIVITY TO PRIMROSE

To the Editor:—Many florists who handle or grow primrose develop a sensitiveness and marked swelling resembling urticaria. This becomes troublesome and some patients cannot enter the greenhouse without having this troublesome condition. I understand that the primrose (Primula obconica) is the only plant which causes this. Can you give me any data as to the treatment? Has a vaccine been prepared for this condition such as one for poison ivy? HOWARD O. SMITH, M.D., Marlin, Texas.

ANSWER.—Hypersensitiveness to primrose is common, especially among florists, and it has been conclusively demonstrated that the resultant dermatitis can come either from contact with primrose or by being close to it, without actual contact. The offending substance is in the air nearby. The primrose is not the only plant that can cause this type of dermatitis (contact dermatitis); it can also be caused by poison ivy (Toxicodendron radicans), sumach, poison oak, pollen oil (ragweeds, grasses), chrysanthemum and tulip. The best treatment for the condition is avoidance, and symptomatic lotions for the urticaria when it occurs. Wearing rubber gloves while handling primroses should help to some extent. There is apparently nothing in the literature regarding treatment by injections of primrose extract such as is used in poison ivy cases which ameliorates the effects but does not prevent them. Bloch (*Arch. f. Dermat. u. Syph.* **162**:349, 1930) has done more work on primrose sensitiveness than any one else and has shown that most human beings (and rats and guinea-pigs) can be made hypersensitive to primrose by repeated painting of an extract on the skin, and they seem to remain hypersensitive. The oily residue of all these plants is the offending factor.

BLOOD PRESSURE DANGERS

To the Editor:—I recently read the statement, as an authoritative dictum, that a blood pressure above 160 at any age is dangerous. Is this generally accepted as a fact by the profession at present? My own observation has been that people with essential hypertension ranging from 160 to 200, especially when the diastolic pressure is in the nineties, frequently have years of comfortable and useful life ahead of them. Also, I have noted that 50 per cent of my cases of cerebral hemorrhage and angina occur in people with so-called normal blood pressure. Please enlighten me. Kindly omit name.

M.D., Illinois.

ANSWER.—Blood pressure levels above 160 systolic are abnormal but not strictly dangerous. Such patients should be studied at regular intervals, particularly from the standpoint of their cardiovascular renal system.

Repeated clinical observations extending over a period of twenty years corroborate the view that individuals with high systolic and relatively low diastolic pressures may go on symptom free for many years.

Cerebral accidents and angina pectoris occur in the absence of hypertension, and even when the blood pressure is below normal. This, however, is true in only about 25 per cent of the cases.

NITROBENZENE

To the Editor:—What is the toxicity of nitrobenzene (oil of mirbane)? Would it be a hazard if used in open containers and agitated in a closed room? May an individual working with nitrobenzene be examined periodically in any way to determine any untoward effects? Please omit name.

M.D., Indiana.

ANSWER.—Nitrobenzene (nitrobenzol, oil of mirbane) acts on the human body much like aniline (aminobenzene). Entry into the body is more often through the skin, so that intoxications are likely to be regarded as accidents rather than as occupational diseases. Inhalation of the dust or fumes containing nitrobenzene may lead to poisoning; acute and chronic forms are recognized together with local burns of the skin.

In acute and severe cases, manifestations center about the formation of methemoglobin, cyanosis, collapse, and respiratory failure. The mildest degree of poisoning is characterized by gastro-intestinal upsets, headache, dizziness, malaise, and burning of the skin. Chronic involvements may disclose some or

all of the following symptoms: anxiety states, disturbances in sensation and coordination, hyperreflexia, visual impairments, cyanosis, profound changes in the cellular elements of the blood, anemia, hematin in the urine, skin eruptions, respiratory embarrassment, and an odor of bitter almonds on the breath.

All workers in nitrobenzene should be given physical examinations at frequent intervals, but exclusive reliance should not be placed on specific tests such as for hematoporphyrin, hematin and methemoglobin, or on the odor of breath. Further information on this highly toxic agent may be found in the International Labour Office's Occupation and Health, and "Industrial Health," by Kober and Hayhurst.

CROSS AGGLUTINATION TESTS BEFORE TRANSFUSION

To the Editor:—Could you kindly inform me whether in blood transfusion work cross agglutination is sufficient without typing? That is, if the cells of the blood of the prospective donor and the recipient do not cause agglutination with the serum of the other, is it perfectly safe to transfuse without preliminary typing? This would obviously make it unnecessary to keep known type serums on hand. Please omit name.

M.D., New York.

ANSWER.—In tests for blood transfusion, cross agglutination is sufficient without preliminary grouping of the bloods. For example, if the serum of the recipient (patient) does not agglutinate the red blood cells of the prospective donor, nor the serum of this donor agglutinate the red blood cells of the recipient, the two bloods are considered to be of the same group and compatible. It is considered comparatively safe to transfuse if the red blood cells of the prospective donor are not agglutinated by the serum of the recipient; hence the use of blood from universal donors by many operators. Preliminary typing, especially when the recipient's blood group is one of the less common, often makes it possible to locate a satisfactory donor more readily.

THE SENSES OF MAN

To the Editor:—Will you kindly tell me whether more than five senses are considered? Also the order in which they come. Please omit name.

M.D., California.

ANSWER.—A greater number of sensations are now recognized than those enumerated in the stereotyped textbooks of a generation ago. Incidentally, it is not possible to evaluate their importance by stating that they should "come" in a specific "order" of significance and/or indispensability. For that reason, the various sensations will be mentioned as they might occur to one:

1. Sight: light and form; color.
2. Taste.
3. Touch: deformation of the skin, tickle and vibration sense, and the deep sensibility of muscle.
4. Temperature: heat and cold.
5. Smell.
6. Proprioceptive stimuli from the muscles, tendons, and joints informing the organism of location in space.
7. Changes in position in space through the functional activity of the semicircular canals, utricle and saccule.
8. Hearing.
9. Pain from skin, muscle and blood vessels.
10. Viscroceptive stimuli of which persons are usually unconscious but which probably affect vasomotor, respiratory and cardiac changes reflexly; e. g., the inhibition of respiration from distention of the lungs.

BOTULISM AND RIPE OLIVES

To the Editor:—In 1919 Dr. Charles Armstrong (*Public Health Reports* **34**: 2877 [Dec. 19] 1919) published an article on the subject of botulism from eating canned ripe olives. Can you tell me whether there has been a serious epidemic of botulism in the country since that time, and can you also give me any reason for the fact that ripe olives are generally considered to be much more dangerous in this regard than green olives? In addition, will you tell me what other foods than olives have been responsible for outbreaks of botulism?

G. HENRY KNOLL, M.D., Le Roy, N. Y.

ANSWER.—The last outbreak of botulism from commercially processed ripe olives occurred in August, 1924, in Los Angeles. The last outbreak of botulism from commercially canned foods of any character occurred in October, 1925, in Hanna, Wyo., from potted meats.

There have occurred, however, many outbreaks, some of serious character, involving a number of cases and a number of deaths from materials packed in the home by various unsafe processes.

Ripe olives are not more dangerous than other foods of like character; in fact, they are less dangerous. The spore of Bacillus botulinus is selective as to the medium in which it grows. Likewise it is sensitive to the chemical reaction of the food which it may have contaminated in the preparation of or in the process of canning. For instance, any vegetable that has a p_H around neutral, which is classified on the p_H scale as 7.2, should always be processed with heat high enough to kill the spore of B. botulinus, as this is the optimal reaction for its growth. Furthermore, the spores of B. botulinus do not ordinarily grow in material that is not packed under vacuum. Green olives not being so packed and with a high salt content, and therefore decidedly alkaline, have always been regarded as safe.

Of course, any canned food that has not been processed at sufficient temperature, and this holds true for home canned foods of all character, except those preserved with sugar or with salt, should be heated for a number of minutes before being served, since the poison produced by B. botulinus in its growth is easily killed at boiling temperatures at sea level. Paradoxically, the spore of the organism is difficult to destroy at boiling temperature.

PERNICIOUS ANEMIA

To the Editor:—I should like to know whether the statistics as to the permanence of cure in pernicious anemia are available. If they are, I should like to know where I might find them.

J. L. GAREY, M.D., Catonsville, Md.

ANSWER.—Since there is no such thing as cure in pernicious anemia so far as is known, there could hardly be any statistics available.

If the question means the relief of symptoms to a greater or lesser extent, the facts are also difficult to obtain at this time since efficient treatment of the disease has been available for only about six years. It seems likely that the vast majority of individuals can be maintained in good health by the adequate treatment of the disease. The most serious complication, usually the result of taking inadequate amounts of potent material, is the development of symptoms referable to the central nervous system. Of course, patients with pernicious anemia have died during adequate treatment from unrelated causes. The use of liver extract in pernicious anemia is somewhat analogous to the use of insulin in diabetes and is not to be regarded any more than is insulin as a specific cure for the condition.

The paper by Beebe and Lewis on the maintenance dose of potent material in pernicious anemia (*Am. J. M. Sc.* **181**:796 [June] 1931) will perhaps serve to answer the question as well as any single contribution to this subject could, in the absence of available statistics.

SUSCEPTIBILITY TO FRACTURE

To the Editor:—Can you suggest treatment for a case showing abnormal susceptibility to fractures? The patient is a boy, aged 15 years, who has had seven fractures in the past six years, five of them fractures of the femur. The last occurred a few days ago when he stepped off of a low porch. The fractures always heal readily and always occur at different points.

C. S. NEER, M.D., Vinita, Okla.

ANSWER.—For fragitalis osseum and osteogenesis imperfecta, the following references are apropos:

Corshner, R. G.: *Am. J. Roentgenol.* **16**: 405 (March) 1926.
Key, J. A.: *Arch. Surg.* **13**: 523 (Oct.) 1926.
Scott, C. R.: *Am. J. Roentgenol.* **12**: 237 (Sept.) 1924.

Concerning the treatment, the following should be beneficial:

1. Cod liver oil.
2. Calcium in any of the recognized forms.
3. Ultraviolet radiation.
4. Foods such as are given to prevent and correct nutritional disturbances exemplified by rickets.
5. Special exercises both on land and under water, and massage of the muscles generally in order to improve their tonicity.

SUPERSTITIONS REGARDING THE HAIR

To the Editor:—Will you please give me some information regarding the cutting of children's hair. I am occasionally asked whether scanty hair in a girl will grow thicker and more healthy if it is regularly cut; also whether the cutting of a good growth of long hair will injure it so that subsequently it will not be so good as before. I know of no scientific answers to such questions, and should be glad to have your opinion. Kindly omit name.

M.D., Michigan.

ANSWER.—These two popular notions check each other admirably. One is as true as the other. Hair is composed of a horny substance, has no circulation, and grows only from the papilla at its base, a separate structure. Cutting the hair at any point has no effect whatever, good or bad, on its growth. Brushing is the best method of stimulating the circulation of the scalp and therefore the growth of hair.

TREATMENT OF PROSTATITIS

To the Editor:—A man, aged 64, in good physical condition, with a history of prostatitis, noticed about eight months ago blood in his semen (following coitus). I started to treat him three months ago. There was no nycturia, the stream was good, the prostate was tender and not enlarged, and the seminal vesicles were somewhat enlarged and tender. In prostatic secretion on expression there were leukocytes and bacilli but no blood. He took about fifteen treatments consisting of diathermy plus intravenous injection of sodium iodide (20: 200), also six injections intramuscularly of a milk protein preparation plus diathermy, each treatment followed by massage of the prostate. The pains in the back and over the bladder disappeared after a few treatments; also the visible blood from the semen. But the latter is still rosy colored, showing erythrocytes under the microscope. The urine is normal. The Wassermann reaction is negative. I am figuring on giving him mercurochrome-220 soluble intravenously. What do you suggest to clear up this condition? Please omit name.

M.D., Indiana.

ANSWER.—The improvement following the treatments reported points to a chronic inflammation apparently excluding a malignant condition. Autohemotherapy will often succeed in cleaning up the remaining symptoms. The routine is to aspirate about 10 cc. out of a superficial vein and immediately inject this quantity of blood into the gluteus muscle. These injections are repeated at short intervals until a definite result occurs. It is not quite evident what mercurochrome should accomplish in such instances. However, it must be kept in mind that intravenous injections of mercurochrome solutions always involve the danger of severe renal disturbances, such an occurrence probably outweighing any possible benefit that could be derived from such medication. Conditions as reported always call for an extensive period of combined treatments.

EFFECT OF FALL IN CASE OF PLACENTA PRAEVIA

To the Editor:—Could you send me information on the effects that a fall might have on mother and baby in a case of central placenta praevia, the fall occurring three weeks before delivery, the mother going one week over her term? A woman with central placenta praevia died an hour after delivery through the placenta by version. It is claimed that a fall which she had three weeks prior to her death probably caused her death. I did not know about the fall until the morning of delivery.

M.D., Ohio.

ANSWER.—There is no available literature on the problem as stated. A parous woman who has a placenta praevia may bleed profusely following a fall. This is due to a loosening of the insecurely attached placenta. If, however, no bleeding resulted following the fall, and the patient went three weeks further until delivery, the maternal or fetal death can hardly be ascribed to the fall. Any trauma sustained by the fall would result in bleeding and immediate injury to mother and fetus through loss of blood.

PATHOLOGY OF INJURY TO HAND

To the Editor:—A man, aged 48, was cranking an automobile when a backfire caused the right hand to be thrown against the fender, striking the middle of the posterior surface of the proximal phalanx of the fifth finger. The skin was broken and there was moderate hemorrhage. The bone was not broken and prompt healing of the skin wound occurred; but a few days after the accident it was noted that the distal phalanx of the fifth finger could not be extended. Six weeks later this condition remains the same. There is no pain or soreness and all other motion is normal, but voluntary extension of the distal phalanx is still impossible. There is loss of tactile sensation in the skin over the posterior portion of the distal and second phalanges. Sensation over the flexor surface is normal. Please discuss pathology. Please omit name.

M.D., Oregon.

ANSWER.—The patient doubtless sustained a cutting injury with division of the extensor tendons of the fifth finger—the extensor communis digitorum and extensor digiti quinti. The two dorsal digital branches of the ulnar nerve, one of which lies on each side of the dorsum of the fifth finger, may have been divided or crushed. In either case there would be loss of sensation on the dorsum of the finger distal to the site of injury.

TROPICAL AMNESIA OR "COAST MEMORY"

To the Editor:—In Queries and Minor Notes (THE JOURNAL, March 19, p. 1019), I believe that you have not fully answered the question asked by M.D., East Africa; therefore I take the liberty of adding my opinion. The condition to which your inquirer refers is said to occur in Africa, mainly on the west coast, and is known as tropical amnesia, or coast memory. It is occasionally found in white persons after sojourning in the tropics several years without being able to make proper adjustments to conditions of living or to the climate. There is reason to believe that the circumscribed amnesia is hysterical in nature, but I do not know whether it actually is. The description of the case given in the query fits in with what little I know of tropical amnesia. Treatment consists of removal from the tropics.

I. S. WECHSLER, M.D., New York.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

CALIFORNIA: *Reciprocity.* Los Angeles and San Francisco, June 15. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Basic Science.* New Haven, June 11. Prerequisite to license examination. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

DELAWARE: Wilmington, June 14-16. Sec., Dr. Harold L. Springer, 1013 Washington St., Wilmington.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 29-30. Sec., Dr. W. C. Fowler, 203 District Bldg., Washington.

FLORIDA: Tampa, June 13-14. Sec., Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

ILLINOIS: Chicago, June 28-July 1. Supt., Mr. Paul B. Johnson, Springfield.

INDIANA: Indianapolis, June 21-23. Sec., Dr. William R. Davidson, 413 State House, Indianapolis.

IOWA: Iowa City, June 7-9. Dir., Mr. H. W. Grefe, Capitol Building, Des Moines.

KANSAS: Kansas City, June 21-22. Sec., Dr. C. H. Ewing, Larned.

KENTUCKY: Louisville, June 8-10. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MARYLAND: *Homeopathic.* Baltimore, June 14-15. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore. *Regular.* Baltimore, June 21-24. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.

MICHIGAN: Ann Arbor and Detroit, June 7-9. Sec., Dr. Nelson McLaughlin, 1010 Maccabee Bldg., Detroit.

MISSOURI: St. Louis, June 14-16. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Examinations in Parts I and II will be held at all centers where there are five or more candidates, but not at Durham, Minneapolis, nor New Haven, June 27-29. Ex. Sec., Mr. Everett S. Elwood, 225 South 15th St., Philadelphia.

NEBRASKA: *Regular.* Omaha, June 9-11. Dir., Mrs. Clark Perkins, Lincoln.

NEW JERSEY: Trenton, June 21-22. Sec., Dr. James J. McGuire, 1101 Trenton Trust Bldg., Trenton.

NEW YORK: Albany, Buffalo, New York, Syracuse, June 27-30. Chief, Professional Examinations Bureau, Room 315, State Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 20. Sec., Dr. John W. MacConnell, Davidson.

OHIO: Columbus, June 7-10. Sec., Dr. H. M. Platter, 85 E. Gay St., Columbus.

OKLAHOMA: Oklahoma City, June 8-10. Sec., Dr. J. M. Byrum, Shawnee.

SOUTH CAROLINA: Columbia, June 28. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TEXAS: Marlin, June 21-23. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Bldg., Dallas.

VERMONT: Burlington, June 22-24. Sec., Dr. W. Scott Nash, Underhill.

VIRGINIA: Richmond, June 15-18. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WISCONSIN: Milwaukee, June 28-30. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., LaCrosse.

WYOMING: Cheyenne, June 6. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

District of Columbia January Report

Dr. W. C. Fowler, secretary, Commission on Licensure, reports the written examination held at Washington, Jan. 11-12, 1932. The examination covered 6 subjects and included 70 questions. An average of 75 per cent was required to pass. Fifteen candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1930)	83.5
Georgetown University School of Medicine		(1929)	83.1, (1930) 79.3, 81.5, 83.9
George Washington University School of Medicine		(1930)	77.8, 86.4
Howard University College of Medicine		(1930)	79.6
Northwestern University Medical School		(1929)	86.8
Indiana University School of Medicine		(1927)	81.1
Columbia University College of Phys. and Surgs.		(1921)	83.3, (1930) 86.1
Medical College of Virginia		(1930)	85.6
University of Virginia Department of Medicine		(1929)	83.4, 88.4

Ohio Reciprocity Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports 15 physicians licensed by reciprocity with other states and two physicians licensed by endorsement, Jan. 5, 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1928)	Colorado
Loyola University School of Medicine		(1928), (1931)	Illinois
Rush Medical College		(1924)	(Illinois, (1931) Michigan
Indiana University School of Medicine		(1909)	Indiana

University of Michigan Medical School	(1925)	Penna., (1926), (1930) Michigan
St. Louis University School of Medicine	(1928), (1930)	Missouri
University of Buffalo School of Medicine	(1911)	New York
Jefferson Medical College of Philadelphia	(1923)	Penna.
Meharry Medical College	(1928)	Tennessee
University of Tennessee College of Medicine	(1928)	Tennessee

LICENSED BY ENDORSEMENT

College	Year Grad.	Endorsement of
Boston University School of Medicine	(1922)	N. B. M. Ex.
American University of Beirut School of Med., Syria	(1926)	N. B. M. Ex.

Territory of Hawaii January Report

Dr. James A. Morgan, secretary, Territory of Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 11-14, 1932. Five candidates were examined, 4 of whom passed and 1 failed. One physician was licensed by endorsement. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
University of Nebraska College of Medicine	(1928)	81.7
Ohio State University College of Medicine	(1923)	83.2
University of Oregon Medical School	(1929)	85.2
Jefferson Medical College of Philadelphia	(1930)	83.3

FAILED

College	Year Grad.
Rush Medical College	(1931)

LICENSED BY ENDORSEMENT

College	Year Grad.	Endorsement of
Jefferson Medical College of Philadelphia	(1929)	N. B. M. Ex.

Book Notices

The Practice of Dentistry and the Incomes of Dentists in Twenty States: 1929. By Maurice Leven, Ph.D., of the Research Staff of the Committee on the Costs of Medical Care based upon data collected under the direction of Dorothy Fahs Beck, of the Research Staff of the Committee on the Study of Dental Practice of the American Dental Association. Publications of the Committee on the Study of Dental Practice of the American Dental Association, No. 1. Cloth. Price, $2. Pp. 224. Chicago: University of Chicago Press, 1932.

In this volume the author has assembled and analyzed a mass of data relative to dental practice not heretofore available. The study, which is the report of a questionnaire survey conducted by the American Dental Association, includes chapters dealing with professional aspects of practice, economic features of practice, the dentist's working year and the number of patients treated, charges for dental services, business practice, incomes by states and types of practice, location and income, year of graduation and income, salaried personnel and income, income as related to working time, and dental incomes and dental expenses.

From the study of the 5,544 reports received, it appears that fully 96 per cent of the dentists practicing at the time of the survey had had at least three years of training in a dental school. This includes about 38 per cent whose formal training extended over a period of four years. Three per cent of the dentists regard themselves as complete or limited specialists, while 8 per cent are partial specialists. In the chapter dealing with the economic features of dental practice, it appears that 53 per cent of all dentists employ salaried personnel of some kind. Approximately 70 per cent of all dentists have practiced in their respective communities throughout their entire professional career.

In 1929 the working year for more than two thirds of the dentists was forty-eight weeks, while about one fourth worked fifty weeks and 10 per cent practiced throughout the entire year. The normal week of the typical dentist consists of thirty hours at the chair, six hours in the laboratory, and ten hours at other office duties; the average dentist treated approximately eight patients daily in 1929 and came in contact with 430 different patients during the year. More than 80 per cent of dentists attempt to maintain an hourly charge of $5, but the great majority vary their fees for the same services.

Dentists' incomes are correlated with the degree of specialization, the 1929 arithmetical average for complete specialists being $15,000, for partial specialists $10,700, and for general practitioners $7,800. The corresponding averages for net income are approximately $8,600, $6,100 and $4,800.

Those who use the data contained in this study must constantly bear in mind that the figures represent incomes and volume of practice for 1929. Since that time, general economic conditions have appreciably affected both the dental and the medical profession, and while certain relative values may remain fairly constant, others must be corrected for the change in economic conditions in order to make them applicable to the present.

The study appears to have been carefully conducted and the text is ample to explain all statistical deductions. The volume should be useful not only to practicing dentists but also as a reference work in libraries, from which students contemplating the study of dentistry may derive many facts concerning the profession.

Blood Sugar in Normal and Sick Children with Special Reference to Coeliac Disease. By Elisabeth Svensgaard. Acta Pædiatrica, Volume XII, Supplementum IV. Paper. Pp. 245. Copenhagen: Levin & Munksgaard, 1931.

Using the Hagedorn-Jensen method, the author first investigated the blood sugar in normal infants and children. In normal infants up to the first year of life she found that fasting blood sugar values were lower than the normal values for adults. After ingestion of dextrose, the duration of hyperglycemia in normal infants under a year of age is as a rule less than two and one-half hours. In normal older children the fasting blood sugar values approach closely the normal adult figures, although occasionally a great variation in an individual child may be found. Likewise the results obtained in older children after the ingestion of dextrose approximate the adult normals. Following these blood sugar investigations on normal infants and children, the author reports her results on the blood sugar determinations in children suffering with celiac disease, cretinism, eczema, rickets and tetany. In celiac disease she obtained only a slight degree of hyperglycemia after ingestion of dextrose in doses of from 1 to 2 Gm. per kilogram. This small rise in blood sugar after the ingestion of dextrose she considers a valuable diagnostic sign in celiac disease. In cretins she obtained a greater degree of hyperglycemia after the ingestion of dextrose after thyroid treatment was instituted. The thyroid treatment seems to have a marked effect on blood sugar regulation in cretins. Blood sugar determinations in infants and children suffering with eczema, rickets and tetany showed only slight variations from the normal values. These interesting observations on blood sugar determinations in normal and sick children should serve as a valuable guide to any one making similar or related studies. A complete bibliography and detailed protocol are attached at the end of the volume.

Health and Hospital Survey, Kansas City, Missouri. Made for the Chamber of Commerce of Kansas City under the direction of the Committee on Public Health and Welfare. Prepared by the Committee on Administrative Practice of the American Public Health Association and the Kansas City Public Service Institute. Paper. Price, $2. Pp. 329. Kansas City: Chamber of Commerce, 1931.

This survey was undertaken at the behest of the Public Health and Welfare Committee of the Chamber of Commerce of Kansas City, Mo., to determine in what respects the health work of the city might be adequate or inadequate and what steps should be taken to improve the service for the money expended. Fourteen different volunteer groups were carrying on health work in addition to various official agencies, resulting in duplication of efforts in some places and leaving gaps in others. The reported number of 127 cases of tuberculosis in 1929 is a record of which any city might be proud were it not for the fact that 306 residents died from that disease during the year, indicating that there existed from 1,500 to 2,700 cases of tuberculosis at the time. Other inconsistencies picture a rather confused state of public health activities—for instance under food control is grouped the control of rabies and under the guise of sanitation is found the cutting of weeds, a procedure that has a doubtful place in a health program. The report is divided into two parts. Part I is devoted to various health activities, such as vital statistics, communicable disease control, child hygiene, school hygiene, public health nursing, milk and food control, sanitation and laboratory service. Each item is discussed in the light of conditions as they actually exist as against the ideal, and at the end of the chapter practical suggestions are made. Every municipal health official will be

interested because he will find parallels with recommended remedies to many of his problems. Part II, devoted to hospitals, is a study in medical economics. The twenty-one hospitals in Kansas City, Missouri, and five in Kansas City, Kansas, are surveyed in detail as to bed capacity, bed occupancy, types of cases admitted, financial data and medical, nursing, laboratory, occupational therapy, dental and social services connected with the hospitals, together with studies of outpatient and clinic facilities. Special chapters are devoted to the tax-supported hospitals which come under the supervision of the director of health.

An Introduction to the Literature of Vertebrate Zoology Based Chiefly on the Titles in the Blacker Library of Zoology, the Emma Shearer Wood Library of Ornithology, the Bibliotheca Osleriana and Other Libraries of McGill University, Montreal. Compiled and edited by Casey A. Wood, M.D., LL.D., Collaborator, Division of Birds, Smithsonian Institution. Cloth. Price, $15. Pp. 643. London: Oxford University Press, 1931.

This is a work by a bibliophile for fellow enthusiasts, and the printer has cooperated nobly. It is primarily a catalogue, but in a series of introductory chapters the compiler, as he modestly calls himself, takes a group of friends through the McGill libraries, shows them the greatest treasures, and incidentally reviews the history of vertebrate zoology by saying a few words about preeminent authors and remarkable books. His emphasis is on natural history and faunistic and systemic studies, but he touches on comparative anatomy and paleontology. The oriental literature referred to will be new to most zoologists. Attention is called to important periodicals and serials. There are two convenient classified indexes in which certain authors are grouped according to the classes of vertebrates they have considered and the areas they have covered.

Protection of Women and Children in Soviet Russia. By Alice Withrow Field. Cloth. Price, $3. Pp. 241. New York: E. P. Dutton & Company, Inc., 1932.

The author of this volume went to Russia to study the system used under the five year plan for the care of women and children. She presents the story of a government planned by men but leading essentially to a matriarchal empire. Beginning with a discussion of the program for the protection of women and children in Russia, she discusses the legal phases of women's rights, the customs regarding abortion and birth control, the consultation rooms established for women, prenatal examinations, maternity care and similar subjects. Of especial interest are the plans for the handling of children, which, obviously, have come under the greatest criticism because of their tendency to make the home secondary in family life. If plans continue as now in effect, the author believes all children will eventually come under complete control of the state. However, at present it seems unlikely, largely because of the present condition of finance, that the children will be taken from their parents except during the period when parents are at work. The final chapters of the book present various bulletins, pamphlets, charts and sheets of instruction for the control of women and children under the five year plan.

Chirurgische Indikationen für Ärzte und Studierende. Von Professor Dr. Karl Reschke, Oberarzt der chirurgischen Universitätsklinik Greifswald. 1. (Allgemeiner) Teil. Paper. Price, 22 marks. Pp. 357. Berlin: F. C. W. Vogel, 1932.

Textbooks of surgical technic are available in comparatively large numbers in various languages. To date there have been none pertaining to surgical indications. The answer to questions that arise in the presence of certain conditions may be found scattered through various textbooks on surgery and in special monographs but has never before been compiled in one volume. This the author attempts and accomplishes quite successfully. Based on personal experience as well as on an extensive review of the literature, this volume deals with the indications for conditions in general surgery. A section dealing with special surgery will appear at a later date. In this volume the author discusses at length and in detail such subjects as the different forms of anesthesia, treatment of wounds, acute and chronic infections, diseases of blood vessels and lymphatics, the various disorders of bones and joints, and tumors. The ideas expressed are adequate, detailed, and in keeping with the best modern thought. Although it contains nothing original or particularly new, this work is of distinct value to the student and young man in surgery and, being complete, may occasionally prove useful to the more experienced in the specialty.

Orthopädische Therapie in der Allgemeinpraxis: Angeborene Deformitäten. Von Hofrat Professor Dr. Hans Spitzy, Direktor und Primararzt des Orthopädischen Spitales in Wien. Therapie in Einzeldarstellungen: Wissenschaftliche Grundlagen und praktische Anwendung. Herausgegeben von Prof. Dr. R. von den Velden und Priv.-Doz. Dr. P. Wolff. Boards. Price, 7 marks. Pp. 115, with 77 illustrations. Leipzig: Georg Thieme, 1932.

The author of this small book is one of the two greatest orthopedic surgeons of Austria. He discusses congenital deformities. Practically every illustration is from his own observation. Torticollis, congenital elevation of the scapula and other deformities of the upper extremity are considered; also deformities of the lower extremity, including dislocation of the hip and other defects of the hip, knee, foot and vertebrae. There are short discussions on osteogenesis imperfecta, cartilaginous exostoses, pseudarthrosis, birth paralysis and spastic paralysis. The illustrations, which include photographs, line drawings and roentgenograms, are clear and effective. The book has been neatly published and is well worth the time spent in reading it.

Gould's Medical Dictionary Containing the Words and Phrases Generally Used in Medicine and the Allied Sciences, with Their Definition, Pronunciation and Derivation. By George M. Gould, A.M., M.D. Edited by R. J. E. Scott, M.A., B.C.L., M.D. Third edition. Fabrikoid. Price, $7.50. Pp. 1538, with illustrations and tables. Philadelphia: P. Blakiston's Son & Company, Inc., 1931.

This is a praiseworthy addition to the others of its kind now on the market. It has retained, for the most part, the salient features of the first two editions. Some changes are, however, immediately noticeable, as, for example, the inclusion of a large number of words which have only recently been incorporated into medical usage; the enlargement of the table of microorganisms, for which this dictionary has always been justly noted, and the appended table of protozoa and metazoa and the infections that they cause. The striking feature of this dictionary is, as it has always been, the simplicity of its arrangement. Each item is defined in its proper place, instead of being carried over to some other place and being defined under a general group heading. In this way the editors avoid a burdensome system of cross-references, which generally serve only to confuse the average user. There are 173 tables in this edition, as against 170 in the last one. Mention should be made of the excellent quality of the paper used in this dictionary, as well as of the admirable printing and illustrations and the new stiff fabrikoid cover, a decided improvement over the old flexible one.

Some Radium Cases at the Middlesex Hospital: A Photographic Record. By A. Cameron MacLeod, M.B., B.S., F.R.C.S. Boards Price, 7/6. Pp. 154, with 122 illustrations. London: John Murray, 1931.

The purpose of this book is primarily to present a photographic record of a series of neoplasms treated with radium in the Middlesex Hospital. Only cases that lend themselves to photographic record are described and depicted. Photographs of epithelioma of the skin, lip and tongue are shown before and after radium treatments. The technic is described and the dose stated. The photographs clearly indicate effective irradiation of this group of tumors. Carcinoma of the breast was treated according to the method first described by Geoffrey Keynes. The photographs constitute a clear and effective demonstration of the results of radiation on surface cancer. The dosage may also serve as a general guide in interstitial irradiation of this group of neoplasms. The author has been more partial to interstitial irradiation, as for example in the treatment of cancer of the lip, which is best treated by the application of radium on the surface by means of a mold.

Mental Healers: Franz Anton Mesmer, Mary Baker Eddy, Sigmund Freud. By Stefan Zweig. Translated by Eden and Cedar Paul. Cloth. Price, $3.50. Pp. 363. New York: Viking Press, 1932.

The mental healers included in this extraordinary volume are Franz Mesmer, Mary Baker Eddy and Sigmund Freud. The life of Mesmer reveals the beginning of magnetic healing and the opening of the temple in Paris. It credits Puysegur for his fundamental observations as to the effects of the mind on the body. The life of Mrs. Eddy is a burning analysis of her career which follows the Dakin and Milmine contributions

for fact and which shows the manner in which the Christian science group have exploited financially the followers of the high priestess of the Christian science cult. In this section of his book, Stefan Zweig ventures numerous aphorisms as to the features of the American character that directed the extraordinary development of Mrs. Eddy's group.

For the work of Sigmund Freud, Zweig has great admiration. He does not, of course, concern himself with the manner in which the freudian doctrines have been so terribly exploited by the disciples and imitators of the great psychologic master. He presents the personality of Freud in a vital manner and reveals the background of freudian phiiosophy. The concluding sentence is enlightening: "And while the experts are still disconcerted because his teaching cannot be satisfactorily pigeonholed and docketed as 'medicine' or 'natural science' or 'philosophy' but partakes of the nature of all, while professors and pundits and privy councilors are still wrangling about its details and its ultimate value, the teaching itself has long since made good and been established as irrefutable—as true in that creative sense which Goethe has made immortal in the words: 'The fruitful, that alone is true.'"

The Lancet Commission on Nursing Appointed in December, 1930, to Inquire Into the Reasons for the Shortage of Candidates, Trained and Untrained, for Nursing the Sick in General and Special Hospitals Throughout the Country, and to Offer Suggestions for Making the Service More Attractive to Women Suitable for This Necessary Work. Final Report. Paper. Price, 2s. 6d. Pp. 256. London: The Lancet, Ltd., 1932.

This is the final report of the committee appointed by the *Lancet* in 1930 "to inquire into the reasons for the shortage of candidates, trained and untrained, for nursing the sick in general and special hospitals throughout the country, and to offer suggestions for making the service more attractive to women suitable for this necessary work." The report includes the reasons which the committee found for the shortage of candidates. It offers suggestions as to how the number of desirable candidates might be increased. The report is based on a large amount of pertinent information, is well edited, and contains a number of tables and charts. It is valuable for all who are interested in the proper supply of nurses, whether in Great Britain or elsewhere.

The Foundations of Medical History. By Sir D'Arcy Power, K.B.E., F.R.C.S., Consulting Surgeon to St. Bartholomew's Hospital. Johns Hopkins University, Institute of the History of Medicine. Cloth. Price, $3. Pp. 182, with 3 illustrations. Baltimore: Williams & Wilkins Company, 1931.

This volume contains the six lectures delivered by the author at the Institute of the History of Medicine in Johns Hopkins University. The writings of Sir D'Arcy in the field of medical history are numerous and invariably interesting. The present series includes an account of St. Bartholomew's Hospital; also some studies of biography, bibliography and iconography. The final essay is entitled Aristotle's Masterpiece.

La maladie de Hodgkin: Lymphadénie aleucémique. Lymphosarcome. Pseudo-leucémie de Bonfils. Morbus Hodgkini de Wilks. Adénie de Trousseau. Granulome malin de Benda. Lymphogranulome malin. Lymphogranulomatose maligne, etc. Par Paul Chevallier, professeur agrégé à la Faculté de médecine de Paris, et Jean Bernard, intern des Hôpitaux de Paris. Paper. Price, 75 francs. Pp. 293, with 69 illustrations. Paris: Masson & Cie, 1932.

This volume considers the typical forms of Hodgkin's disease and will be followed by a volume dealing with variations. The available knowledge about Hodgkin's disease is presented in an interesting, orderly form, nothing original being presented. The controversial matter of etiology is discussed. There is some repetition in subject matter, but the book is well outlined and indexed. The bibliography is especially valuable for its reference to the French and the Italian literature.

Kolloidreaktionen der Rückenmarkflüssigkeit (Technik, Klinik und Theorie). Von Dr. med. Willy Schmitt, Privatdozent und Oberarzt der Medizin, Universitäts-Poliklinik, Leipzig. Paper. Price, 12.50 marks. Pp. 181, with 72 illustrations. Dresden: Theodor Steinkopff, 1932.

The study of cerebrospinal fluid has become so extensive in recent years that entire monographs have been written on a single phase of the subject. In this monograph the author reviews the colloidal reactions on cerebrospinal fluid, including Lange, mastic, benzoin, paraffin, shellac and sublimate fuchsin. A detailed description of the technic and an interpretation of every test is given. The author has added nothing original, but he has covered the subject in all its phases. His familiarity with the minutest details shows that he has had a great deal of experience with the various tests. This is not a book for the general practitioner, but it will be found of distinct value to the laboratory worker.

The Genius of Louis Pasteur. By Piers Compton. Cloth. Price, $4.50. Pp. 361, with 8 illustrations. New York: Macmillan Company, 1932.

This biography of the great chemist who founded modern bacteriology is written simply and with understanding. It has not the brilliance of the book by Vallery-Radot nor is it as scientific as the contribution of Duclaux. It depends on these works for its facts, but neither in the preface nor in any prominent manner elsewhere does the author give credit to these source books. The book is by no means brief.

Spontaneous Pneumothorax in the Apparently Healthy. By Hans Kjærgaard. Paper. Pp. 252, with 29 illustrations. Copenhagen: Levin & Munksgaard, 1932.

This monograph is based on a study of the case records of fifty-one patients who had a total of sixty-one attacks of spontaneous pneumothorax resulting from rupture of a vesicle with a valve on the surface of the lung. It includes three cases of such unruptured vesicles found incidentally at necropsy and studied by the author. The case histories are given in detail. There is a comprehensive bibliography. The volume is an exhaustive and authoritative contribution to the subject.

L'année thérapeutique: Médication et procédés nouveaux. Par le Dr. A. Ravina. Sixième année, 1931. Paper. Price, 16 francs. Pp. 182. Paris: Masson & Cie, 1932.

This little volume on new medicines and therapeutic procedures resumes the series interrupted in 1924 by the death of Dr. Cheinisse. It should be particularly welcome in this country as a help in the more general diffusion of knowledge concerning the newer therapeutic measures developed in Europe and especially among the French.

Medicolegal

Compensability of Sarcoma Following Trauma

(Hertz v. Watab Pulp & Paper Co. (Minn.), 237 N. W. 610)

Hertz fell in the course of his employment and was injured in the pelvic region. The fall did not immediately disable him, and he continued at work for some two months. All the while, however, he complained of the injury. Eventually he consulted a local practitioner, who told him that he had hernia. This diagnosis proved to be incorrect; it was found that he was suffering from a cancerous growth. Hertz applied for compensation under the workmen's compensation act, but his claim was rejected by the industrial commission, because it could find no causal relation between his fall and the admittedly malignant growth. On appeal, however, the Supreme Court of Minnesota remanded the proceeding to the commission, to consider such further evidence as might be offered.[1] The commission heard such evidence, but before it rendered a decision Hertz died. An autopsy showed that death was due to a "fibro sarcoma arising in the right pubic bone of a type which might be called primary sarcoma of the bone or osteogenic sarcoma." The industrial commission then found that the accidental injury that Hertz sustained was the cause of his death. From an award in favor of his widow, who had been substituted as the claimant, the employer appealed to the Supreme Court of Minnesota. That court affirmed the award of the industrial commission.

The opinion of the expert witnesses who testified, said the Supreme Court, differed as to whether the sarcoma from which Hertz died was or was not caused by his injury. Considering

1. Hertz v. Watab Pulp & Paper Co. (Minn.), 230 N. W. 481, J. A. M. A. **96**: 1257 (April 11) 1931.

their views in connection with other facts in evidence, however, the commission was justified in finding, as it did, that the injury to Hertz, though slight, either originated the sarcoma or exaggerated and excited it, so as to make the injury, within the view of the law, when administering the compensation act, the cause of the fatal growth.

This court, said the court, has sustained awards of the industrial commission for compensation for sarcoma or cancer of traumatic origin in *Austin* v. *Red Wing Sewer Pipe Co.*, 163 Minn. 397, 204 N. W. 323; *Gaetz* v. *City of Melrose*, 155 Minn. 330, 193 N. W. 691; and *Halper* v. *The Golden Rule*, 180 Minn. 477, 231 N. W. 195. In *Storing* v. *Hotel Radisson Co.*, 177 Minn. 519, 225 N. W. 652, however, it sustained a finding of the commission against the occurrence of cancer as the result of an accident. In *Winchester Milling Corp.* v. *Sencindiver*, 148 Va. 388, 138 S. E. 479, a case similar to the one now before the court, the Supreme Court of Appeals of Virginia, in sustaining a finding that held that an injury had resulted in a sarcoma, said:

> Taking a common sense, practical view, as courts and commissions must take of the ordinary happenings of life, boiled down to its last analysis the medical theory is that there is a relationship between the receipt of injury and origin of sarcoma, and that the degree of injury plays no important part. With this in mind we find a perfectly healthy, strong man, who has never lost any time from work or complained of any illness, suffers an injury and from that time on is incapacitated, grows worse and worse, sarcoma develops at the point of injury, from which he dies. The lay mind, under such circumstances, can reach no other conclusion than that reached by the commission, viz., that the sarcoma was either caused by the injury or was aggravated by it.

A similar conclusion was reached in *Lewis* v. *Port of London Authority*, 7 B. W. C. C. 577, 111 L. T. Rep. 776.

In the present case, said the court, taking the lay testimony and the medical testimony into account, the commission was well justified in finding a causal connection between the injury and the sarcoma that resulted in the employee's death. The award in favor of the widow was ordered affirmed.

Liability of Employer of Examining Physician

(New York Central Railroad Co. v. Wiler (Ohio), 177 N. E. 205)

Wiler, employed as a locomotive fireman by the New York Central Railroad Company, was directed to submit to an examination by the company's physician, so that the company might know his physical condition. He complied. Later he sued the company, alleging that its physician, while he was feeling with his fingers under and around Wiler's left groin, used unusual and unnecessary force and thereby caused a hernia. To Wiler's petition, the company filed a demurrer, which the trial court sustained. On appeal, however, the court of appeals, Lucas County, reversed that judgment and remanded the cause for further proceedings. Thereupon, the company appealed to the Supreme Court of Ohio.

On behalf of the company, it was contended that when a railroad company employs a physician to render any service for it and for its own purpose, which service that physician in his professional capacity might render to a patient for the patient's own purpose, the duty of the railroad company ends with the exercise of reasonable care in the selection of the physician. In support of this contention, the company relied on a decision by the Supreme Court of Ohio, in *Youngstown Park & Falls Street Ry. Co.* v. *Kessler*, 84 Ohio St. 74, 95 N. E. 509, which arose out of the treatment of Kessler by the company's physician for an injury received by Kessler in alighting from one of the company's cars. The purpose of the treatment in that case, however, said the Supreme Court, was to cure Kessler's injury. It was directly for the benefit of Kessler. If it was for the benefit of the company at all, it was only indirectly so, in mitigation of the damages it might be required to pay for causing the injury. That situation, the court held, created the relationship of physician and patient between Kessler and the company's physician. The fact that the company assumed the obligation to compensate the physician for the service he rendered did not alter that relation.

But in the present case, said the Supreme Court, the purpose of the examination was not to treat or cure Wiler, an employee of the appellant railroad company. It was to inform the company of his physical condition, so as to enable it intelligently to determine whether it could safely and profitably continue him as one of its employees. The examination was for the benefit of the company, and not for the benefit of the employee. Under such circumstances, the relationship between the company and its examining physician was that of master and servant, unqualified by the circumstance that the servant was as a matter of fact a physician. The action, therefore, was not an action for malpractice and subject to the statute governing the limitation of actions for malpractice. It was an action for bodily injury and the time within which action might be brought was determinable by the statute relating to actions for bodily injuries.

The judgment for the court of appeals remanding the cause to the trial court for further proceedings was affirmed.

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Hamilton, Ontario, June 14-16. Dr. J. R. Yung, 670 Cherry St., Terre Haute, Ind., Secretary.
American Association for the Study of the Feeble-Minded, Philadelphia, May 26-29. Dr. Groves B. Smith, Godfrey, Illinois, Secretary.
American Association of Genito-Urinary Surgeons, Niagara Falls, Ontario, Canada, May 26-28. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.
American Association of Medical Milk Commissions, Washington, D. C., May 20-21. Dr. Harris Moak, 360 Park Place, Brooklyn, N. Y., Sec'y.
American Bronchoscopic Society, Atlantic City, May 21. Dr. Richmond McKinney, 899 Madison Avenue, Memphis, Tennessee, Secretary.
American Gynecological Society, Quebec, May 30-June 1. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
American Laryngological Association, Atlantic City, May 19-21. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 23-25. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.
American Neurological Association, Atlantic City, June 6-8. Dr. Henry Alsop Riley, 117 East 72d Street, New York, Secretary.
American Ophthalmological Society, New London, Conn., June 27-29. Dr. Emory Hill, 501 East Franklin Street, Richmond, Va., Secretary.
American Orthopedic Association, Toronto, Canada, June 15-18. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.
American Otological Society, Atlantic City, May 17-19. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
American Pediatric Society, Rochester, Minnesota, May 26-28. Dr. Hugh McCulloch, 500 South Kingshighway, St. Louis, Secretary.
American Psychiatric Association, Philadelphia, May 30-June 3. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.
American Surgical Association, New Haven, Conn., May 16-18. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
American Therapeutic Society, Baltimore, May 16-17. Dr. Grafton Tyler Brown, 1801 I Street N.W., Washington, D. C., Secretary.
American Urological Association, Toronto, May 30-June 2. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.
Connecticut State Medical Society, New Haven, May 25-26. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Savannah, May 17-20. Dr. Allen H. Bunce, 139 Forrest Avenue N.E., Atlanta, Secretary.
Illinois State Medical Society, Springfield, May 17-19. Dr. Harold M. Camp, 203 Lahl Building, Monmouth, Secretary.
Maine Medical Association, Rangeley, June 16-18. Dr. Philip W. Davis, 22 Arsenal Street, Portland, Secretary.
Massachusetts Medical Society, Boston, June 8-10. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, San Francisco, June 20-22. Miss Marjorie J. Darrach, 645 Mullett Street, Detroit, Secretary.
Minnesota State Medical Association, St. Paul, May 23-25. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
Missouri State Medical Association, Jefferson City, May 23-26. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.
National Tuberculosis Association, Colorado Springs, June 6-9. Dr. Charles J. Hatfield, 7th and Lombard Streets, Philadelphia, Secretary.
Nebraska State Medical Association, Lincoln, May 24-26. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
New Hampshire Medical Society, Manchester, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 15-17. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
New Mexico Medical Society, Santa Fe, May 19-21. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.
New York, Medical Society of the State of, Buffalo, May 23-25. Dr. Daniel S. Dougherty, 2 East 103d Street, New York, Secretary.
North Dakota State Medical Association, Grand Forks, June 1-2. Dr. Albert W. Skelsey, 18 Broadway, Fargo, Secretary.
Oklahoma State Medical Association, Tulsa, May 24-26. Dr. Claude A. Thompson, Manhattan Building, Muskogee, Secretary.
Pacific Northwest Medical Association, Spokane, Wash., June 27-29. Dr. Frederick Epplen, 1215 Fourth Avenue, Seattle, Secretary.
Rhode Island Medical Society, Providence, June 2. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
South Dakota State Medical Association, Watertown, June 20-22. Dr. John F. D. Cook, Langford, Secretary.
Western Branch of the American Urological Association, Portland, Ore., July 1-2. Dr. F. S. Dillingham, 548 S. Spring Street, Los Angeles, Secretary.
West Virginia State Medical Association, Parkersburg, June 21-23. Mr. J. W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

7: 279-414 (Feb.) 1932

Some Cardinal Circulatory Syndromes. A. M. Fishberg, New York.—p. 279.
Clinical Aspects of Arteriosclerosis. R. W. Scott, Cleveland.—p. 292.
Order of Ventricular Excitation in Human Bundle-Branch Block. F. N. Wilson, A. G. Macleod and P. S. Barker, Ann Arbor, Mich.—p. 305.
*Transverse Diameter of Heart. J. H. Bainton, New York.—p. 331.
*Diuretic Effect of Digitalis. E. L. Kellum, Rochester, Minn.—p. 342.
Gonococcus Endocarditis: Report of Case. H. B. Kirkland, New York.—p. 369.
*Diagnostic Value of Epinephrine in Angina Pectoris. L. N. Katz, W. W. Hamburger and M. Lev, Chicago.—p. 371.
Chart for Differential Diagnosis of Cardiac Enlargement by Means of Roentgen Ray. G. Levene and W. D. Reid, Boston.—p. 380.
*An Instrument to Determine Direction of Electrical Axis of Human Electrocardiogram: Based on Graphic Method of Carter, Richter and Green. M. Goodman, New York.—p. 383.
Coronary Thrombosis with Temporary Complete Heart Block: Case. Olga S. Hansen, Minneapolis.—p. 386.
*Left-Sided Displacement of Heart: Unusual Case. L. H. Sigler, Brooklyn.—p. 388.

Transverse Diameter of Heart.—Bainton considers the prediction table of Hodges and Eyster a fairly satisfactory guide in enabling an examiner to judge abnormality in the size of the male heart and to estimate the degree of enlargement. The adjusted standard for females in which the figures for males is reduced by 0.8 cm. is equally satisfactory. One half the internal diameter of the chest in the orthodiagram is a measurement which does not approximate the actual transverse diameter of the normal heart often enough to have much value as a standard guide.

Diuretic Effect of Digitalis.—Kellum studied the diuretic effect of digitalis on three healthy human subjects, and on twelve patients with congestive heart failure and considerable edema. One patient was observed and treated on two different occasions. None of the patients exhibited evidence of serious impairment of renal function. The study was made on one of the healthy human subjects three times, the diet and doses of digitalis being varied with each experiment. To insure standard experimental conditions, all the subjects were given a diet of weighed food, as constant as possible from day to day, of known low salt, water and protein content, the same as that employed by Keith, Smith and Whelan. The weighed food both of the healthy subjects and of those with myocardial failure is shown in a table. The total caloric values of the diet given to normal, healthy subjects were adequate, but the food given to patients with cardiac failure was low in total calories. This food was given to the patients with cardiac failure because they were at constant rest in bed, which reduced their caloric requirements, and because it was essential that all food should be eaten. The content of sodium chloride was low in all of the diets with two exceptions, and varied between 1 and 1.5 Gm. daily. The diets of patient 4 and healthy subject 1, experiment 2, contained approximately twice the amount of sodium chloride that was present in the others. Attention is also called to the low water content of all the diets except that of healthy subject 1, experiment 2, and that of patient 4, which contained approximately 300 cc. of water in excess of the others. The importance of the diet of weighed food, which was kept as constant as possible, is emphasized because there have been relatively few standardized experimental studies of digitalis in which such a diet has been employed. On the basis of his observations the author concludes that digitalis, when given to the healthy human subject in therapeutic doses and under the experimental conditions laid down in his study, seems to exert slight, if any, diuretic effect. The diuretic effect of digitalis in cases of cardiac failure with edema is uncertain; such effect may be marked, slight or absent. It is suggested that in the treatment of congestive heart failure and edema digitalis be employed for its beneficial cardiac effect, and that other substances be also employed for their superior and more certain diuretic action.

Diagnostic Value of Epinephrine in Angina Pectoris.—Katz and his associates reinvestigated the subject of the diagnostic value of epinephrine in angina pectoris on a group of six cases of known angina pectoris, on a group of six normal interns and in a case of "irritable heart" with precordial distress, and one of syphilitic aortitis with precordial distress. In every case the patient was put to rest in the decubitus position for half an hour before the observations were started. Serial electrocardiograms were made; the blood pressure, heart rate and in some cases the respiratory rate were followed and the subjective symptoms of the patient recorded. As a check, in suitable instances, the patient was subjected to a mild exercise to bring on his symptoms. The results are assembled in tabular form and characteristic curves are shown. In the normal cases, precordial distress was noted in two of the six subjects following epinephrine. In the angina cases, three of the six patients had no pain, although in one of them a typical pain attack was produced by exercise. Of the two abnormal cases (not anginal), an attack of pain over the precordium occurred in one but not in the other. It would seem from these results that the production of pain by epinephrine is not a reliable sign of angina pectoris. Furthermore, the pain when produced in two of three angina cases was long lasting and upset the patients greatly, and in one was not checked by glyceryl trinitrate. Even in the normal cases, one of the subjects had a severe symptomatic reaction presumably because of a susceptibility to epinephrine. On the basis of their observations, the authors conclude that epinephrine as a test for angina pectoris is unreliable in regard to both the symptoms produced and the electrocardiographic changes. This unreliability makes the test of little value, particularly in view of the severe reactions sometimes encountered.

Instrument to Determine Direction of Electrical Axis of Electrocardiogram.—By a slight modification of a graphic method for determining the direction and "manifest value" of the electrical axis of the human electrocardiogram described by Carter, Richter and Green and its application in the form of a handy instrument (of which an illustrated description is given), Goodman has found the method of considerable utility. The angle and manifest potential of an electrical axis can be estimated in a few seconds. The instrument is particularly valuable for teaching purposes, because it makes possible the visualization of the changes of the electrical axis in a cardiac cycle.

Left-Sided Displacement of Heart.—Sigler reports a case of sinistrocardia, most likely congenital, which from perusal of the literature he considers to be the only one of its kind on record. It was observed in a healthy man, aged 50, who had gone through life without any circulatory or respiratory embarrassment; the heart with its basal vessels was entirely displaced to the left of the spinal column and other mediastinal contents, such as the esophagus, trachea and bronchi, were likewise displaced. Although a history of injury was given, it seemed to be a mere coincidence, as there was no definite evidence of a pathologic condition the nature of which might be considered to be the cause of the displacement.

Archives of Pathology, Chicago

13: 193-365 (Feb.) 1932

*Elliptical Human Erythrocytes: Report of Two Cases. M. C. Terry, E. W. Hollingsworth and V. Eugenio, Hines, Ill.—p. 193.
*Lesions of Nervous System Resulting from Deficiency of Vitamin B Complex. H. M. Zimmerman and Ethel Burack, New Haven, Conn.—p. 207.
*Renal Denervation: Effect of Snake Venom and Chilling on Renal Vascularization. G. Milles, E. F. Müller and W. F. Petersen, Chicago.—p. 233.
Experimental Infarction of Glomeruli in Dogs: II. Blood Pressure in Chronic Renal Insufficiency. C. R. Jensen and C. W. Apfelbach, Chicago.—p. 255.

Elliptic Human Erythrocytes.—Terry and his associates collected fifty-two instances of elliptic human erythrocytes, including two of their own. An analysis of the cases establishes the condition as an hereditary anomaly not incompatible with

health and without any proved relation to disease, occurring in white persons, Negroes and mulattoes, and about equally divided between males and females. Both sexes may transmit it. A generation may be skipped. All four blood groups are represented. A necropsy is reported showing that oval cells were present in the smallest vessels of the cardiac muscle, spleen and suprarenals. An occasional oval erythrocyte was found in the marrow of the femur, and the marrow there, instead of having the usual yellow color and thick consistency, was reddish purple and semifluid or lymphoid. In other respects the necropsy disclosed nothing more than was anticipated from the patient's clinical condition, which was chiefly that of severe nephritis. Certain experiments are presented and discussed. Some of them were merely such as were necessary to establish the validity of the cases reported. Others yielded the following observations: 1. When the blood of one of the patients was subjected to the action of hypotonic solution of sodium chloride the oval cells resembled in their behavior normal erythrocytes rather than the poikilocytes of a patient with anemia. 2. Both round and oval cells were shown to exist together in the peripheral circulation, and the oval shape was shown to depend on structure and not on environment. 3. It was found possible to separate the two kinds of cells and to do certain experiments that showed that the oval cells were heavier than the round cells, and that they were more resistant than the round cells to the hemolytic action of hypotonic solution of sodium chloride. A speculation is offered as to the possible atavistic significance of the occurrence of elliptic erythrocytes in man.

Lesions of Nervous System Resulting from Vitamin B Deficiency.—Zimmerman and Burack found extensive demyelination in the sciatic, median, ulnar and vagus nerves and in the brachial plexuses of dogs deprived of the water-soluble B vitamins. This myelin destruction was most severe in the sciatic and least severe in the vagus nerves of all the animals subsisting on vitamin B-deficient ration. The extent of the anatomic alterations in the peripheral nerves varied in direct proportion to the severity and duration of the paralytic symptoms. Peripheral polyneuritis of the same type, but of a less degree, was present in the control animals, which were entirely deprived of food but supplied with an adequate amount of the B complex. Ganglion cell changes and disseminated foci of myelin destruction in the brain or spinal cord could not be held responsible for the clinical symptoms of this nutritional disorder. Dogs deprived wholly or in part of the thermostable B_2 factor showed large zones of degeneration and vascular proliferation in the vermis of the cerebellum and in the region of the substa ia gelatinosa rolandi. A dog that had subsisted throughout the entire experimental period on a highly purified ration deficient only in the heat-stable factor (B_2) evidenced degeneration in the fasciculus gracilis of the spinal cord.

Renal Denervation.—By roentgenologic study of the vascular bed of the kidney in dogs, Milles and his associates demonstrated that renal denervation is followed by a long persisting dilatation of the cortical blood vessels. Chilling of the animal for a short time causes a definite vasoconstriction of the intact kidney as compared with the denervated organ; with prolonged and fatal chilling, this difference is no longer apparent. Daily chilling over long periods results in marked change of the vascular bed of the normal kidney, while the denervated kidney remains unaltered. A relation of the chill to the onset of acute nephritis, as well as of the effect of repeated spasm of the renal vessels (as with repeated chilling) to the pathogenesis of nephritic changes is made probable. A vascular poison, such as snake venom, causes greater injury to the denervated kidney, the normal kidney presumably protecting itself through vasoconstriction. The effect appears to be true for infectious diseases as well (distemper). No change in the vascular bed was observed with single doses of mercuric chloride or with repeated doses of uranium acetate.

Colorado Medicine, Denver

29: 101-144 (March) 1932

Addison's Disease and Hormone of Suprarenal Cortex. C. F. Kemper and P. A. Dickman, Denver.—p. 105.
Alimentary Anemia. G. M. Blickensderfer, Denver.—p. 113.
Osteochondritis. N. L. Beebe, Fort Collins.—p. 118.
Amebiasis in Colorado: Its Symptomatology. A. J. Chisholm, Denver.—p. 124.

Journal of Comparative Psychology, Baltimore

13: 1-141 (Feb.) 1932

Age and Intelligence in Rats. N. R. F. Maier, Ann Arbor, Mich.—p. 1.
Effect of Continuous Rotation on Albino Rat. R. M. Dorcus, Baltimore.—p. 7.
Establishing Backward Associations in Forward Learning of Maze by Albino Rats. Mildred Day Dorcus.—p. 11.
Study of Configuration Learning. H. Taylor, Oklahoma City.—p. 19.
Time Discrimination in White Rat. A. C. Anderson, Cincinnati.—p. 27.
Response of White Rat to Tonal Stimuli. B. D. Thuma, Ann Arbor, Mich.—p. 57.
Effect of Rickets-Producing Diet on Learning Ability of White Rats. Margaret Frank, Chicago.—p. 87.
Controlled Observations on Behavior of Kittens Toward Rats from Birth to Five Months of Age. W. W. Rogers, New York.—p. 107.
Gregariousness of Pigeons. W. S. Taylor.—p. 127.
Effects of Periodicity on Learning to Walk a Tight Wire. G. B. Johnson, Denver.—p. 133.

Journal of Infectious Diseases, Chicago

50: 89-184 (Feb.) 1932

Persistence of Pasteurella Avicida in Blood and Organs of Fowls with Spontaneous Fowl Cholera. J. M. Hendrickson and K. F. Hilbert, Farmingdale, N. Y.—p. 89.
*Comparative Study of Antibody Response After Various Methods of Administration of Mixed Typhoid Vaccine, with Particular Reference to Intradermal and Oral Methods. L. Tuft, Elizabeth M. Yagle and S. Rogers, Philadelphia.—p. 98.
Prevention of Brucella Abortus Infection in Guinea-Pigs: Effect of Convalescent and of Hyperimmune Serum. R. Gwatkin, Toronto, Canada.—p. 111.
Immunity to Vaccination Produced in Rabbits by Repeated Injection of Testicular Vaccine Virus Filtered Through a Basic Filter. S. P. Kramer, Cincinnati.—p. 119.
*Effect of Typhoid Fever and Previous Typhoid Vaccination on Antibody Response to Inoculation with Typhoid Vaccine. R. F. Feemster, New Orleans.—p. 121.
Metabolic Studies of Streptococci. M. A. Farrell and S. Thomas, Bethlehem, Pa.—p. 134.
Staphylococcus Aureus Agglutinins in Tuberculous Effusions. M. Pinner, Tucson, Ariz., and Marie Voldrich, Northville, Mich.—p. 143.
Variants of Salmonella Pullorum. W. N. Plastridge and L. F. Rettger, Storrs, Conn.—p. 146.
Intranuclear Inclusions in Submaxillary Gland of Rat. M. Juanita Thompson, Toronto, Canada.—p. 162.
Precipitinogenic Action of Minute Quantities of Ovalbumin. L. Hektoen and A. G. Cole, Chicago.—p. 171.
Study of Carbohydrate and Protein Fractions of Meningococci. J. Zozaya and J. E. Wood, Glen Olden, Pa.—p. 177.

Antibody Response to Typhoid Vaccine.—A comparison made by Tuft and his associates of the titers of agglutinins and complement-fixing antibodies after intradermal, subcutaneous, intramuscular, intravenous and oral methods of administration of mixed typhoid vaccine revealed a uniformly better and more persistent response after local injection, particularly after intradermal injection. Such results may be explainable on the basis of local stimulation of the formation of antibodies by the reticulo-endothelial cells, which are particularly abundant in the skin and subcutaneous tissues, or possibly by slow absorption of the antigen. The antibody response after any of the methods showed definite dependence on the antigenic potency or the age of the vaccine—the older the vaccine, the less the response. The general observations of others as to time of appearance of the agglutinins and complement-fixing antibodies, the variability in titer and the tendency to early disappearance were corroborated. A complete lack of uniformity in the titers of agglutination and complement fixation was observed in many serums; an adequate explanation for this is not apparent. The antibody response after oral administration of the vaccine was completely negative, in spite of the use of different strains of vaccine and different groups of persons. From a therapeutic standpoint, the intradermal injection of small doses of a freshly prepared and antigenically potent mixed typhoid vaccine receives experimental justification and has in the authors' hands proved satisfactory.

Antibody Response to Inoculation with Typhoid Vaccine.—According to Feemster, persons who have had typhoid or who have had inoculations with typhoid vaccine produce larger amounts of antibodies in response to subsequent inoculations with typhoid vaccine than those who have not had typhoid or been vaccinated against the disease. The routine injection of three doses of typhoid vaccine may not give as high a degree of immunity as has been believed. A second or third injection some weeks or months after the first would seem to be indicated. The Widal reaction is less reliable in the case of a person who has been vaccinated two or more times than in that

of a person who has been vaccinated only once. The complement fixation reaction is no more reliable than the agglutination reaction in diagnosing infection with the typhoid bacillus. The difficulties and uncertainties encountered in carrying out and interpreting bactericidal tests render the procedure unsatisfactory for the routine diagnosis of typhoid. The severity of the reaction to the injection of typhoid vaccine is in no way related to the immunity that is formed in response to the injection.

Journal of Nervous and Mental Disease, New York

75: 217-360 (March) 1932

Neurovascular Cardiac Disorders: Possibilities in Field of Management. F. J. Farnell, Providence, R. I.—p. 217.
Marked Self-Mutilation Presenting Dorsal Root Syndrome: Case. J. H. Conn, Boston.—p. 251.
Lead Encephalopathy with Recovery: Case. K. Rothschild, New Brunswick, N. J.—p. 263.
Multiple Sclerosis, Associated with Diabetes Insipidus, Which Was Relieved by Lumbar Puncture. E. Q. King, Chicago.—p. 267.

Journal of Pharmacology & Exper. Therap., Baltimore

44: 123-267 (Feb.) 1932

*Contribution to Pharmacology of Pseudomorphine. Janet Travell, New York.—p. 123.
Thio and Thiomethyl-Ammonium Compounds. R. Hunt and R. R. Renshaw, Boston.—p. 151.
Action of Arsenic on Leaves. I. A. Parfentjev and W. K. Devrient, St. Louis.—p. 171.
*Experimental Investigation on Treatment of Toxemia. Part I. G. N. Myers, Boston.—p. 191.
Study of Cardiovascular Responses in Man to Intravenous and Intra-Arterial Injection of Acetylcholine. L. B. Ellis and Soma Weiss, Boston.—p. 235.
Claude Bernard's Theory of Narcosis. V. E. Henderson and G. H. W. Lucas, Toronto, Canada.—p. 253.

Pharmacology of Dehydromorphine.—Travell made observations on frogs, rabbits, cats and dogs after oral, subcutaneous, intramuscular and intravenous administration of dehydromorphine acid tartrate in doses varying from 0.1 to 150 mg. per kilogram. Dehydromorphine, administered orally and subcutaneously in large doses, is inactive; injected intramuscularly and intravenously, it produces characteristic effects in the rabbit, cat and dog. The difference in the results obtained after various methods of administration explains some of the discrepancies in the literature regarding the activity of the drug. Dehydromorphine resembles morphine in many of the effects produced by its intravenous administration. It induces, in suitable dosage, prompt nausea, salivation and defecation (rabbit, cat and dog); marked fall in blood pressure after small initial doses, and often no change in blood pressure after continued larger doses (cat, dog); stimulation of respiration with subsequent depression, and death from respiratory paralysis (rabbit, cat and dog); convulsions (rabbits); hypnosis, somnolence and muscular depression (rabbit, dog). It differs from morphine in that it usually causes depression in the cat; it induces acceleration of the cardiac rate in the dog; it does not produce complete narcosis in any of the species studied. The probable seat of some of the actions of dehydromorphine is discussed, and it is suggested that the drug may act directly on the respiratory, defecation and vomiting centers in the medulla. It is demonstrated that dehydromorphine does not exert a curare-like action. A tentative hypothesis is advanced to explain its paradoxical effect on the blood pressure. The characteristic effects of the intravenous injection of dehydromorphine may be partially masked by the previous administration of morphine. The author concludes that her experiments afford no basis for the assertion that certain of the phenomena of chronic morphine poisoning are due to the formation of dehydromorphine from morphine in the body.

Experimental Investigation on Treatment of Toxemia.—Myers describes experiments in which he noted that digitalis when administered in a correct manner during the earliest stages of toxemia has a definite life-saving action. Early digitalization is necessary and must be slow and progressive. Animals so treated are able to tolerate several lethal doses of diphtheria toxin without succumbing. Digitalis and strophanthus prevent myocardial degeneration, which is a constant feature of the controls. Digitalized animals always respond by an immediate and profound leukocytosis to an injection of a lethal or a sublethal dose of diphtheria toxin. This increase in leukocytes is much greater than that obtained by injecting toxin into normal animals. Electrocardiographic records taken in these experiments showed no gross changes in cardiac rhythm or conduction.

Medical Journal and Record, New York

135: 209-260 (March 2) 1932

Suprarenal Hemorrhage in Adult: Especial Reference to Hyperpyrexia. B. Seligman, Brooklyn.—p. 209.
Electrocoagulation of Tonsils. W. A. Gross, Chicago.—p. 214.
Injection Treatment of Hemorrhoids. R. V. Gorsch, New York.—p. 216.
Management of Acute Hemorrhages in Peptic Ulcers. M. Einhorn, New York.—p. 219.
Tonsillectomy Under Spinal Anesthesia: Report of Case. H. Cohen, New York.—p. 220.
Value of Epidural Block in Sciatica. L. F. Miller, Chicago.—p. 221.
Nocturnal Head Jerk. W. Moser, Brooklyn.—p. 222.
Psychoanalytic Interpretation of Mental Arrest. L. P. Clark, New York.—p. 223.

Military Surgeon, Washington, D. C.

70: 203-312 (March) 1932

Medical Department in the First Cavalry Division Maneuvers. E. King and R. P. Williams.—p. 203.
Typhoid Fever in Vaccinated. T. J. Burrage.—p. 231.
Streptococcic Stomatitis. S. V. Mead.—p. 238.
Application of Physiologic Chemistry to Pancreatitis. A. M. Hanson.—p. 244.
Recollections of Zamboanga. C. A. Stammel.—p. 250.
Service with the Caduceus. R. U. Patterson.—p. 256.

Minnesota Medicine, St. Paul

15: 141-216 (March) 1932

*Operative Treatment of Joint Tuberculosis. M. S. Henderson, Rochester.—p. 141.
*Observations in the Diagnosis of Gallbladder Disease. M. H. Hoffman, St. Paul.—p. 144.
*Diagnosis and Management of Coronary Arterial Disease. M. H. Nathanson, Minneapolis.—p. 150.
Remote Effects of Head Injury. W. H. Hengstler, St. Paul.—p. 163.
Tuberculosis in Rural Community. E. J. Simons, Swanville.—p. 168.
Varicose Veins: Some Special Considerations in Treatment. R. C. Logefeil, Minneapolis.—p. 172.
Postoperative Care of Rectal and Anal Cases. H. F. Bayard, Minneapolis.—p. 180.

Operative Treatment of Joint Tuberculosis.—Henderson believes that in joint tuberculosis conservative treatment has its greatest field of usefulness in the treatment of children; operative treatment has its greatest field in the treatment of adults. If the adult patient is in good general condition, and there are no draining sinuses, fusion should be produced when practical. The knee, spinal column, shoulder and hip are anatomically suited to a fusion operation. Each patient constitutes an individual study, and generalities that may be true in the main may not be applicable to the individual.

Diagnosis of Gallbladder Disease.—Hoffman presents an analysis of 155 patients who presented symptoms that warranted the removal of their gallbladders. The diagnosis was correct in slightly over 90 per cent. Stones were found in 77 per cent of cases. Pain was considered to be the most reliable symptom. Night pains occurred in 38 per cent of the pathologic cases, and, in the absence of a definite peptic ulcer history, is thought definitely to indicate the presence of gallbladder disease. Digestive symptoms, although suggestive of gallbladder disease, are not of great diagnostic value. The Graham-Cole test is of unquestionable value if the gallbladder fails to fill or if stones are visualized. The other observations are not considered to be very reliable. Eleven normal cases were studied and were found to present about the same symptoms as the pathologic cases. Four patients were completely relieved of their symptoms by the removal of their gallbladders.

Coronary Arterial Disease.—Nathanson states that there are two distinct clinical pictures associated with coronary disease: (1) the anginal syndrome, consisting of attacks of pain or acute dyspnea, and (2) the manifestations of congestive heart failure. Coronary disease with congestive heart failure is usually associated with hypertension and presents practically the same problems in diagnosis and treatment as congestive failure from other causes. The diagnosis of the anginal type is frequently of great difficulty, as the clinical picture may be atypical and variable. The diagnostic features of the anginal type are enumerated and discussed and an evaluation is made of the various diagnostic criteria. Significant physical signs

are usually absent. The electrocardiogram is of great aid in diagnosis and shows some abnormality in about 70 per cent of the cases. There are two chief indications in treatment: (1) the treatment of the attack and (2) therapy directed toward the underlying pathologic changes and the prevention of attacks. The anginal pain is most favorably treated by the sublingual administration of hypodermic tablets of glyceryl trinitrate and usually requires morphine. Many cases respond satisfactorily to ephedrine. The therapy aiming at the prevention of attacks includes (1) the readjustment of the patient's activities and habits, (2) the use of coronary dilating drugs, and (3) surgical methods for interrupting the sensory impulses from the heart.

New England Journal of Medicine, Boston

206: 315-370 (Feb. 18) 1932

Resection of Right Colon and Anastomosis of Ileum to Transverse Colon After Mikulicz Plan. F. H. Lahey, Boston.—p. 315.
Annual Oration of Boston Medical Library: Haller and the Humanization of Bibliography. J. F. Fulton, New Haven, Conn.—p. 323.
Massachusetts Pneumonia Program. R. Heffron, Boston.—p. 328.
Progress in Study of Cardiovascular Disease in 1930. P. D. Camp, London, England, and H. B. Sprague, Boston.—p. 330.

206: 371-428 (Feb. 25) 1932

Umbilical Hernia. R. H. Miller, Boston.—p. 389.
Plan for Management of Arthritis in Large Communities. F. R. Ober, Boston.—p. 392.
End-Results in Series of Sixteen Cases of Fibrosarcoma. R. W. French, Fall River, Mass.—p. 393.
Atypical Familial Dystrophy: Two Cases. G. de N. Hough, Springfield, Mass.—p. 396.
Chance Infections from Typhoid Carriers. G. W. Anderson and C. B. Mack, Boston.—p. 398.

New York State Journal of Medicine, New York

32: 251-308 (March 1) 1932

Acute Glanders in Man: Case Report. L. I. Ross and R. L. Wells, New York.—p. 251.
Plastic Surgery, Its Uses and Limitations. C. R. Straatsma, New York.—p. 253.
Recorded and Resident Death Rates in New York State. J. V. de Porte, Albany.—p. 257.
*What Every Member of Medical Profession Should Know About Protecting Women from Death from Cancer of Breast. J. C. Bloodgood, Baltimore.—p. 259.
Cervical Cancer: Its 1926-1929 Incidence in Five New York State Cities: Its Prevention: Its Future. G. A. Wood, Syracuse.—p. 265.
Vincent's Otitis Media in Infancy. I. N. Kugelmass, New York.—p. 272.

Cancer of Breast.—Bloodgood calls attention to the fact that thousands of women who have read the correct information in the daily press or who have learned it from their family physician, or have acquired the modern habit of annual examinations, have shown that the greatest risk a women runs today, if the lump in her breast proves to be cancer, is about 25 per cent, while the ignorant woman who delays largely because of her ignorance and not of fear has less than 10 per cent chance of a cure. Women need no instructions in what the warnings are. They will recognize them in time. But every woman needs special instruction how to act when warned. Recent figures show that when a woman seeks an examination the moment she observes anything unusual in one or both breasts, the chances are that 85 per cent of the warnings will be of such a character and the examination of such a decided observation that no operation or irradiation with roentgen rays or radium is necessary. In about 15 per cent of the cases of a lump of such distinct character it will be discovered by the finger of the physician or the transilluminating light that the lump must be removed, and the lump only. The lump is immediately subjected to microscopic study. In less than half of the cases, cancer or a condition suggesting malignancy will be discovered by the microscope, and the complete operation with removal of the breast must follow. In more than half of the cases, only the lump will have to be removed and the breast will be saved. Therefore the woman who seeks an examination at once runs the risk of cancer in less than 10 per cent of the cases and increases her chances of a cure from less than 10 to more than 70 per cent. Those who delay increase the incidence of malignancy and decrease the chances of a cure. Without doubt annual examinations of all women and semiannual pelvic examinations of mothers, during which the breast will be carefully surveyed, should increase the protection of women from death by cancer of the breast. As yet it is impossible to prevent the development of cancer in a woman's breast, but she can be taught and influenced to have the cancerous lump discovered and properly removed early, so that the chances of a permanent cure are best.

Philippine Islands M. Assn. Journal, Manila

12: 1-52 (Jan.) 1932

Modern Trend of Health Administration. H. Velarde, Manila.—p. 1.
Pulmonary Nocardiosis: Report of Case. C. Monserrat, Manila.—p. 11.
Preventive Medicine. P. F. Russell, Manila.—p. 25.
Foreign Bodies in Esophagus. V. C. Alcantara and C. D. Ayuyao, Manila.—p. 31.

Physical Therapeutics, Elmira, N. Y.

50: 1-40 (Jan.) 1932

Physical and Physiologic Actions and Therapeutics of Static Electricity. C. R. Brooke, Newark, N. J.—p. 1.
Present Status of Hospital Use of Physical Therapy. R. Kovacs, New York.—p. 8.
Recent Developments in Electrosurgery. E. N. Kime, Indianapolis.—p. 9.
Retrospective View of Physical Therapy in Urology. W. S. Pugh, New York.—p. 11.
Some Recent Literature in Dietetics. J. W. Torbett, Marlin, Texas.—p. 13.
*Coagulation of Cervical Canal for Chronic Follicular Cervicitis. G. A. Remington, Chicago.—p. 16.

Coagulation of Cervical Canal for Chronic Follicular Cervicitis.—Remington states that by using the proper electrodes or applicators, active and indifferent, with the right amount of milliamperage, one can do an excellent surgical diathermy trachelorrhaphy and curettage. The applicators or electrodes, as he has designed them for his own use, are well adapted to the anatomic structure of the operative field and facilitate rapid effective treatment. With the patient placed on the table in the dorsal recumbent position, the feet elevated in stirrups, the buttocks well down to the edge of the table, a large bivalve vaginal speculum is inserted and adjusted to bring the cervix into good position and good vision. A disk applicator is inserted laterally and slid under the anterior lip, thus elevating the cervix. A ball-tipped electrode is then inserted within the cervical canal up to the internal os, both electrodes are connected to the terminals of the fixed point coagulating unit, and the current selector switch is placed at point 3 for fairly high milliamperage (2,000) to provide a long hot spark. The operator now steps on the foot switch and at the same time slowly withdraws the applicator with a light upward pressure so as completely to cover the roof of the canal; he allows a few seconds for the withdrawal, or just enough time to prevent any unnecessary cramping within the uterine cavity. He repeats this operation four times, making light pressure each time in four different areas, first on the roof or superior wall of the canal, second on the right lateral wall, third on the floor or inferior wall, and fourth on the left lateral wall, or vice versa, also placing the different disk electrode each time on the same side of the cervix on which pressure is made, so that he is always pressing toward the disk. After coagulation of the canal has been completed, the disk is withdrawn and the ring applicator is inserted by holding the shaft straight up over the mons veneris, moving the hand to the patient's left inguinal region, then raising and at the same time pressing down the ring (as in passing a sound in the penis), when it will slide in and around the cervix and fit snugly. The sharp electrode is placed in the long handle, the switch is turned to point 1, the foot switch is stepped on, and all tissue within the ring is coagulated by sinking the sharp point of the active electrode into the tissue to a depth of from one-eighth to one-fourth inch, taking first the posterior lip and later the anterior lip. For the first treatment it would be best to coagulate first the canal and part of the posterior lip or as much as the patient can stand without great discomfort. The degree of sensitiveness varies with patients. The author does not use any local anesthetic in these cases. In the greater number of large boggy lacerated cervices the external os will be a large irregular opening—almost round—instead of a horizontal slit. This is where the ball-tipped electrode is best adapted, as it gets into the folds or rugae and no tissue escapes treatment. It is impossible to do a complete coagulation in one treatment. The average case requires from three to six treatments to assure a good, clean, cervix.

Public Health Reports, Washington, D. C.

47: 479-533 (Feb. 26) 1932

*Tularemia: Occurrence in Sage Hen, Centrocercus Urophasianus. R. R. Parker, C. B. Philip and G. E. Davis.—p. 479.
Health Officer's Viewpoint of Child Hygiene. T. Clark.—p. 487.

47: 535-599 (March 4) 1932

The Chemistry of Cell Division: III. Inhibition of Cell Division of Amoeba Proteus by High Dilutions of Copper Salts: Antagonism of Copper and Glutathione. H. W. Chalkley and C. Voegtlin.—p. 535.

47: 601-649 (March 11) 1932

National Leper Home (United States Marine Hospital), Carville, Louisiana. O. E. Denney.—p. 601.

Tularemia.—Data secured by Parker and his associates from a small area near Roy, Fergus County, Montana, during a period of mortality among local sage hens, have furnished added evidence that gallinaceous game birds are a potential source of human infection. Bacterium tularense was recovered from the tissues of dead and killed sage hens, and also from ticks of the species Haemaphysalis cinnabarina, with which the sage hens were infested. It was not evident whether Bacterium tularense was the cause of the epizootic or a secondary or incidental factor. However, a comparison of data secured from both inside and outside the affected area has shown that sage hens from within were much more heavily tick infested; they were the only ones shown to be carrying infected ticks. The evidence secured suggests that Haemaphysalis cinnabarina, a tick not previously incriminated, is a natural carrier of tularemia. Reports are included of infection with tularemia from quail, of two cases in which there was a possibility that infection was from quail, and of a possible case from dressing a sage hen.

Southwestern Medicine, Phoenix, Ariz.

16: 49-100 (Feb.) 1932

Influence of Heredity, Environment and Early Habits in Development of Personality. M. K. Wylder, Albuquerque, N. M.—p. 49.
Jaundice. F. H. Kruse, San Francisco.—p. 52.
Nephrosis. N. W. Barker and E. G. Bannick, Rochester, Minn.—p. 61.
Carcinoma of Prostate. D. M. Davis, Phoenix, Ariz.—p. 65.
General Consideration in Handling of Fractures, Taking Fracture of Femur as an Example. W. S. Sharp, McNary, Ariz.—p. 67.
Changing Pollen Picture. E. W. Phillips, Phoenix, Ariz.—p. 70.
Agranulocytic Angina. C. A. Eaton, Yuma, Ariz.—p. 74.
Rational Treatment of Pneumonia. H. T. Safford, Sr., El Paso, Texas—p. 77.
Impressions of and Suggestion for Staff Meetings. S. I. Bloomhardt, Phoenix, Ariz.—p. 79.
Dissecting Aneurysm of Aorta: Case. D. M. Davis, L. B. Baldwin and P. Guttman, Phoenix, Ariz.—p. 81.
Radiosensitive Tumors. H. P. Mills, J. M. Greer and W. W. Watkins, Phoenix, Ariz.—p. 83.
Public Health Notes. J. R. Earp, Santa Fe, N. M.—p. 86.

Wisconsin Medical Journal, Madison

31: 146-219 (March) 1932

The Small Community Hospital. A. A. Axley, Washburn.—p. 155.
Spinal Anesthesia: Benefits Conferred on Patient and Surgeon. R. H. Jackson, Madison.—p. 158.
Two Years' Experience with Spinal Anesthesia. F. E. Butler, Menomonie.—p. 166.
*Epilepsy in Children. M. G. Peterman, Milwaukee.—p. 169.
Skull Fractures. A. V. DeNeveu, Milwaukee.—p. 174.
Gastroduodenal Ulcer; Factors That Determine Chronicity. E. H. Mensing, Milwaukee.—p. 177.

Epilepsy in Children.—Peterman considers it desirable at present to retain the designation "epilepsy" to describe a certain disease complex of which the most characteristic symptom is periodically recurring convulsions. The convulsions are apparently immediately due, as are most convulsions, to a cerebral edema. The cause of epilepsy and of the periodic recurrence of the convulsive state is not known. The most important problem in the study of a patient with convulsions is a differential diagnosis, and the final diagnosis of epilepsy is made by exclusion. The practical treatment of the epileptic child (if he cannot be placed in a hospital for fasting and the ketogenic diet) may be summarized as follows: (1) a definite daily regimen which includes a long nap and a long sleep, meals at regular hours and a daily bowel movement; (2) a restricted carbohydrate and protein and a high fat diet; (3) fluid restriction to a minimum, at least to 600 or 800 cc. daily and less if convulsions continue, and (4) phenobarbital in large enough doses to control any seizures that may occur after or until the foregoing procedures are established.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Physical Medicine, London

6: 223-242 (Feb.) 1932

Types of Arthritis Amenable to Treatment of Pelvic Organs by Diathermy and Ionization. C. A. Robinson.—p. 225.
Mild Radium Therapy. V. Borland.—p. 226.
Electrical Potentials on Human Skin. W. E. Boyd and M. R. Gavin.—p. 228.
Treatment of Gout by Physical Methods. L. C. E. Calthrop.—p. 231.
Ultraviolet Irradiation in Treatment of Diseases of Children. H. H. Perlman.—p. 233.

British Medical Journal, London

1: 317-362 (Feb. 20) 1932

Commemoration of Great Men. W. Trotter.—p. 317.
*High Blood Pressure as an Early Sign of Toxemia of Pregnancy. F. J. Browne.—p. 320.
Synthalin in Treatment of Diabetes. A. P. Thomson, R. J. Gittins and G. Thomas.—p. 322.
Activity of Commercial Preparations of Hog's Stomach. J. F. Wilkinson.—p. 325.
*Note on Aortic Valvular Disease with Reference to Etiology and Prognosis. M. Campbell and J. W. Shackle.—p. 328.
Simple Technic for Photography of Pathologic Specimens. C. J. C. Earl.—p. 330.

High Blood Pressure as an Early Sign of Toxemia of Pregnancy.—It is shown by Browne that in the toxemia of later pregnancy a rise of blood pressure often precedes by a prolonged period the onset of albuminuria. During the interval between the rise in blood pressure and the appearance of albuminuria (varying in the reported cases from eleven to eighty-nine days), there are usually no symptoms or signs to suggest that the patient is in any way abnormal. There is some evidence that there may be, in the earlier stages of the pregnancy of patients who later develop toxemia, a temporary elevation of the blood pressure, which soon subsides and which may be an expression of increased neuromuscular irritability and of a greater tendency to vasoconstriction in such patients. The importance, for the timely diagnosis of toxemias of pregnancy, of routine estimations of blood pressure is emphasized. When these are made, treatment can be commenced at a very early period, with the obvious advantage of minimizing the risk of eclampsia and of chronic nephritis. The author believes that the term "albuminuria of pregnancy" is a bad one and is no doubt responsible for much of the permanent kidney damage that has in the past been a sequel of the toxemia of late pregnancy. Its use has pushed unduly into the foreground the albuminuria, which is really a late symptom, and has therefore tended to obscure the early hyperpiesis, and has thus been the cause of dangerous delay in diagnosis and treatment.

Aortic Valvular Disease.—Campbell and Shackle report that in a series of cases with disease of the aortic valves, the condition was due to rheumatism in 200, to syphilis in 55, to atheroma in 20, and to all other causes in 21 cases. Out of every six rheumatic cases, roughly, three of the patients had aortic incompetence and mitral stenosis, one had both with aortic stenosis as well, one had aortic stenosis and incompetence, and one had aortic incompetence alone. When there was no mitral disease there were two men for each woman; when there was mitral disease there were two men for every three women. They came under first observation at all ages, least commonly before 10 or after 50. There was so little difference between the ages of those with and those without aortic stenosis that its presence must depend on the severity and nature of the attack rather than on the length of time that had elapsed. Pure aortic stenosis was rarely found, and, as far as could be judged from the pulse pressure, the stenosis was relatively unimportant compared with the regurgitation, even when the signs were well marked. Among the syphilitic cases there were three men for each woman, nearly four fifths being between 40 and 60. Aortic stenosis was rarely or never present, and the average pulse pressure was much greater than in the rheumatic cases (110 instead of 70). Nearly all the atheromatous cases were men, between 50 and 80. Aortic stenosis was more important and more frequently present, the signs of regurgitation being often absent. Auricular fibrillation was present in 30 per cent of those who also had mitral stenosis, in 8 per cent of the rheu-

matic cases without mitral stenosis, and only rarely in the nonrheumatic group. Left ventricular preponderance was found in about half the electrocardiograms of those with pure aortic disease, normal limits being found in the remainder. The T waves were inverted, most often in lead I, in about one fourth of the rheumatic cases and in about half of the others. The prognosis was enormously better in the rheumatic group. The average duration of life after the development of aortic incompetence was probably twenty years, excluding those who died quickly from active rheumatic carditis. In the syphilitic group, on the other hand, it was not much more than two years after the development of symptoms, few patients living for eight years.

Irish Journal of Medical Science, Dublin

No. **74**: 49-96 (Feb.) 1932

Some Present Day Aspects of Preventive Medicine. M. H. O'Connor.—p. 53.
Methods of Obstetric Diagnosis and Treatment at Rotunda Hospital in 1909, Compared with 1929. B. Solomons.—p. 67.
Ruptured Interstitial Tubal Pregnancy. B. Solomons.—p. 75.
Various Aspects of Version. J. S. Quin.—p. 76.
Persistent Occipitoposterior Presentations. R. M. Corbet.—p. 81.
Double Abductor Paralysis of Vocal Cords Due to Malignant Growth. T. G. Wilson.—p. 83.
Case of Lung Abscess. G. Bewley.—p. 84.

Journal of Tropical Medicine and Hygiene, London

35: 65-80 (March 1) 1932

*Blackwater Fever. M. Ghiron.—p. 65.
*Achlorhydria in Pellagra. J. B. Guthrie.—p. 71.
Note on Filarial Worm Found in Sections of Nasal Tumor Excised from Child, with Especial Reference to Embryo. A. J. Noronha.—p. 74.

Blackwater Fever.—Ghiron studied the serum of four individuals who had suffered from a severe attack of blackwater fever. Serum was taken three or five days after the attack for ascertaining its modifications. It possessed a marked hemolytic faculty in vitro toward blood corpuscles that had absorbed quinine. Of the red cells taken from various animal or diseased subjects, those that belonged to patients with benign and malignant tertian malaria, either treated or not with quinine, had the faculty of being more easily dissolved. Therefore, to obtain an evident hemolytic curve it is necessary to combine three factors: red cells of malarial subjects and quinine and hemoglobinuric serum. The significance of the hemolytic curve is estimated from three points of view; namely, (1) if it is compared with the curve of red cells in quinine solution, (2) if it is compared to the hemolysis of quininized red cells and serum of normal and diseased subjects, and (3) from the importance that has to be ascribed to corpuscles of malarial patients. Therefore it must be concluded that in hemoglobinuric subjects a hemolysin is present which becomes evident when the red cells have absorbed quinine, but principally if they are taken from a malarial subject. In every hemoglobinuric patient a hemolysin is present, even if only attenuated, that may be demonstrated by the method mentioned. This hemolysin acts at different concentration and may disappear after a certain time. Its specific reaction cannot then be demonstrated in vitro. The characteristic points of the reaction are the following: 1. A serum of a hemoglobinuric subject, possessing active hemolysins, can disclose the presence of malaria in the individual who provides the blood corpuscles. 2. The malarial blood corpuscles that have absorbed quinine can reveal the hemolytic properties of the serum of an individual who has had an evident or a latent, clinically incomplete, attack of blackwater fever. 3. The negative reaction in serum of individuals who have suffered from blackwater fever allows the administration of quinine.

Achlorhydria in Pellagra.—On the basis of his study of 336 cases of pellagra, Guthrie concludes that the occurrence of hydrochloric acid in the gastric juice in a case of pellagra gives a somewhat better prognosis than if this does not exist, although achlorhydria is no absolute criterion of severity in pellagra. Achlorhydria may constitute a factor in the diagnosis of a doubtful case and may point toward a positive diagnosis. Histamine excitation of gastric secretion gives no striking increase or decrease in the percentage of incidence of achlorhydria noted. It facilitates the test somewhat in the sore-mouthed pellagrin, because it can be used with one insertion of the small tube and without any act of mastication or swallowing. The high incidence of achlorhydria in pellagra would seem to indicate the need of further study of this syndrome in order to shed light on the possibility of a relationship to pernicious anemia, even in the face of unlike blood pictures in the two diseases.

Lancet, London

1: 381-434 (Feb. 20) 1932

Commemoration of Great Men. W. Trotter.—p. 381.
*Arterial Atony and Arteriosclerosis. J. Plesch.—p. 385.
*Diagnosis of Amyloid Disease by Intravenous Injection of Congo Red. J. E. Wallace.—p. 391.
Blood Grouping of Mongolian Imbeciles. L. S. Penrose.—p. 394.

Arterial Atony and Arteriosclerosis.—Plesch sets out the thesis that arteriosclerosis is only one phenomenon in a constitutional systemic disease affecting more particularly unstriped muscle. The disease is by no means restricted to local areas; on the contrary, it attacks the whole vascular system simultaneously. The local changes, which are called atheroma, atherosclerosis, ossification of the arteries, and a number of other names, serve the purpose of strengthening the walls of excessively dilated blood vessels at points of greater strain. Arteriosclerosis is a disease that sets in at every age, that can be arrested, and that can be cured in the early stages and beneficially influenced in the later stages; it is not an ailment of old age which must of necessity be progressive and incurable. Even by purely local observation, it would be possible to distinguish between two forms of arteriosclerosis—namely, the arteriosclerosis of old age, due, in the strict sense of the words, to wear and tear, with its local atheromatous calcified areas as secondary mechanical hysteresis, and arteriosclerosis as a disease in itself, a constitutional systematic allergic primary condition of the smooth muscles, the sympathetic nerves, and the connective substance. These two types appear clinically quite independently of each other. Even though the pathologic anatomic alterations show no characteristic indications of the one or other type of the disease, and even if the histologic pictures are vague or very much alike, one is nevertheless compelled at the bedside to make a clear distinction between these two forms of the disease for a great number of reasons. The essential characteristic of arteriosclerosis cannot be the deposition of lime, for at every age, even in infancy, lime is found in the arterial walls in a surprisingly large number of cases. The primary cause of arteriosclerosis is the weakening both of the muscular and of the elastic elements of the walls of the blood vessels. If the weakened blood vessels are not able to offer sufficient resistance to the blood pressure, they become stretched and dilated. At points particularly exposed to dynamic pressure, alterations occur which in the end serve no other purpose than to raise the resistance of the walls. This process of alteration, which is completed by the deposition of lime plates, offers protection against rupture. Calcification and ossification are, therefore, not a disease but a healing process. The first local changes caused by excessive wear and tear in parts of the vascular walls are anatomically characterized by proliferation of the tunica intima at quite an early stage. The various layers and the specific elements of the arterial walls are involved to a varying degree in the disease process. Corresponding with the longitudinal and transverse tonicity of vascular walls, there must be longitudinal and transverse muscles that act independently of each other. The tone of the specific elastic elements must also be taken into account, because longitudinal extension narrows a blood vessel, and an excised blood vessel becomes shorter. The two muscular symptoms are functionally, and therefore also clinically, quite dissimilar in their behavior. The annular muscles counteract more particularly the internal pressure of the blood vessel, and the longitudinal muscles its longitudinal extension, while the elastic fibers of the artery regulate both strain and pressure.

Diagnosis of Amyloid Disease.—According to Wallace, the rationale of the diagnosis of amyloid disease by the intravenous injection of congo red depends on the essential fact that amyloid material absorbs congo red. An intravenous injection of an aqueous solution of this dye is made, and the percentage decrease of the dye content of the plasma (or serum) over a period of one hour is estimated colorimetrically. In the normal person an amount of from 10 to 30 per cent is found to have disappeared. In cases of amyloid disease there is a decided increase in the rapidity with which the dye leaves the blood, and a diminution at the end of one hour of anything between 30 and 100 per cent may be recorded.

South African M. Assn. Journal, Cape Town

6: 1-32 (Jan. 9) 1932

Disorders of Sleep in Infancy and Childhood. G. K. Cross.—p. 3.
Disease and the Individual: Short Survey of Some Biochemical Aspects. F. W. Fox.—p. 8.
The New Somerset Hospital. C. C. Elliott.—p. 15.
Clinical Significance of Amebiasis. J. A. Macfadyen.—p. 16.
Analysis of Ninety-Two Fatal Heat-Stroke Cases on the Witwatersrand Gold Mines. E. H. Cluver.—p. 19.

Gynécologie et Obstétrique, Paris

25: 97-176 (Feb.) 1932

Blood Platelets in Course of Menstruation, Pregnancy and Lochial Period. E. Benhamou and A. Nouchy.—p. 97.
*Lateral Pyocolpos. F. Papin.—p. 111.
Radical Treatment for Fixed Retroflexion of Uterus. V. Matveev.—p. 121.
Combined Action of Thymus and Posterior Lobe of Hypophysis in Uterine Inertia. W. Laubscher.—p. 132.

Lateral Pyocolpos.—Papin describes a personal case in which the patient at the beginning experienced a periodic loss of black blood (hematocolpos) between the menstrual periods and later had purulent discharges (pyocolpos). The malformation present was what is designated in the literature as pseudodidelphic uterus (the uterine bodies separated and the cervices joined). The author believes that in lateral hematocolpos there is no communication between the blind uterovaginal canal and the normal uterovaginal canal; but when a small lateral opening communicates with the normal uterovaginal canal, open at the base, infection sets in and a pyocolpos results. In the consideration of diagnosis, uterine or uterovaginal malformations should be considered as a possibility. In the surgical treatment of pyocolpos, the intervention can be by the vaginal route or laparotomy and the blind vagina extirpated or simply the septum separating it from the normal vagina destroyed. However, laparotomy and dissection of the vaginal pocket is dangerous when the discharge is purulent. If the lesions are discovered after the hysterectomy (as in the author's case) it is preferable to cut the septum between the two vaginas. However, it is better, if the diagnosis is made early, to use the vaginal route for the intervention.

Journal Médical Français, Paris

21: 1-45 (Jan.) 1932

*Hyperparathyroidism and Osseous Syndromes. P. Sainton.—p. 3.
Osseous and Parathyroid Lesions of Recklinghausen's Disease; Osseous Lesions of Paget's Disease. P. Sainton and J. L. Millot.—p. 13.
*Surgical Anatomy of Parathyroids. B. Cunéo and S. Blondin.—p. 19.
*Infantile Tetany and Parathyroid Insufficiency. M. Lelong and R. Even.—p. 25.
*Chronaxia in Hypoparathyroidism and Hyperparathyroidism. G. Bourguignon.—p. 30.
Chronic Rheumatism and Parathyroids. A. Laporte.—p. 37.
Parathyroid Hormone. H. Simonnet.—p. 40.

Hyperparathyroidism and Osseous Syndromes.—According to Sainton, there is no doubt at present as to the relationship which exists between hyperparathyroidism and certain osseous syndromes. The metaplastic diseases, according to Recklinghausen's classification, comprise fibrous osteitis and nonparasitic osseous cysts: Paget's disease, leontiasis ossea, the hyperostosic and metaplastic diseases forming tumors of the maxilla and giant cell sarcomas. Fibrocystic osteitis of Recklinghausen in most cases is a result of a hypertrophy of the parathyroids, usually adenomatous, which mobilize the bone calcium. The author does not believe the syndromes of Recklinghausen and Paget can be dissociated and opposed; the lesions and certain clinical aspects seem to point to analogous processes in the two, while leontiasis ossea is included in the group by reason of analogous roentgen signs, and osteosclerosis fragilis (Albers-Schönberg's disease) by reason of signs pointing to hyperparathyroidism. The author reasons that in osteopathies such as osteomalacia and rickets the decalcification forces the parathyroids to secrete and compensate for the loss in calcium. Therefore, hypertrophy is not always related to hyperactivity of the gland. The parathyroids can be adenomatous and not have any disturbance in secretion, and the adenomatous condition may be concomitant with both hyperparathyroidism and hypoparathyroidism. It is similarly true that patients with parathyroid osteopathies can have only temporary phases of hyperparathyroidism. After a discussion of the clinical, anatomopathologic and therapeutic aspects, he draws the following conclusions: 1. In the presence of a chronic osteopathy localized in one bone, roentgen and clinical examination should also include the rest of the skeleton, including the cranium, and the scapular and the pelvic regions. 2. If there is a chance of the presence of the syndrome of Recklinghausen or of Paget, the parathyroid region should be explored and examined either by palpation or by roentgenography for a probable tumor. 3. The calcium and phosphorus balance should be determined and compared with the activity and the progression of the osseous process. 4. Chronaxia of the muscles should be compared with the biochemical observations. 5. If the investigations lead one to suspect a parathyroid lesion, a methodical surgical exploration should be made and the parathyroid tumor should be removed. 6. After the intervention the patient should be carefully watched for the slightest signs of parathyroid insufficiency, so that hypoparathyroidism can be immediately counteracted by calcium medication associated with parathyroid hormone therapy.

Surgical Anatomy of Parathyroids.—Cunéo and Blondin find that in almost all their anatomic observations (95 per cent) the two parathyroids lie in the thyroid space, on the posterior face of the lateral lobe, in the neighborhood of the branching of the inferior thyroid artery; but in a few cases the glands lie under the capsule of the thyroid (4 per cent) or even inside the gland (1 per cent). In certain difficult cases in which exploration is fruitless, the authors advise resection of the terminal segment of the inferior thyroid artery together with the excision of a posterior band of the thyroid parenchyma. But in the majority of cases the authors recommend the following technic: The patient is placed in a position habitual for thyroid surgery. Anesthesia may be general, local or regional, but the authors prefer general ether anesthesia in order to avoid any infiltration that may occur. The best incision is the necklace incision, passing along the lower flexion fold of the neck. In bilateral extirpations, the incision takes the form of a curve slightly concave above and posteriorly; it unites the anterior borders of the two sternocleidomastoid muscles and passes beyond them 5 or 6 mm. The incision ought to be low in order to be hidden by a necklace in women patients. It is sometimes possible to make the incision in the lowest flexion fold, but the position of these cutaneous folds vary. Before incising the skin and the subadjacent cellular and cutaneous bed, one should arrest the hemorrhage from the arterioles and especially the veins, then incise the superficial cervical aponeurosis, and practice a débridement on the sternocleidomastoid muscle, parallel to the muscular fibers, in order the better to isolate the body of the muscle and thus facilitate its separation. Then the medial aponeurosis is incised. To isolate the parathyroids, one must cut the omohyoid and the sternocleidohyoid muscles and reach the sternothyroid muscle. In incising the latter at the level of its external border, one opens the thyroid capsule and penetrates into the parathyroid space. The thyroid capsule can easily be cut vertically at the external border of the sternothyroid muscle in order to put in place two retractors. When one has discovered the parathyroid, it is seized with well controlled dissection forceps and cut at its vascular pedicle. It is well to note that the intervention may be bilateral. The presence of an adenoma on one side does not preclude the presence of one on the other side. The authors did not observe any accidents of tetany when the intervention was limited to the principal gland.

Infantile Tetany and Parathyroid Insufficiency.—Lelong and Even discuss the literature and the anatomic, physiologic and therapeutic arguments and conclude that tetany in the child can be conceived as a form of parathyroid insufficiency. The resulting nutritional disturbance can be studied biochemically. Disturbance in calcium metabolism is almost always accompanied by hypocalcemia in young patients. Perhaps the fact that hypocalcemia may be present without tetany, and tetany without hypocalcemia, may be explained by nutritional modifications that are more complex than a simple hypocalcemia. The metabolism of fats, carbohydrates and especially proteins may play a part; the part played by guanidine and its derivative, creatine, has been suggested. The essential factor may be a disequilibrium between the various metabolisms rather than a disturbance in a single metabolism.

Chronaxia in Hypoparathyroidism and Hyperparathyroidism.—Bourguignon's studies show that, in general,

hypoparathyroidism produces an increased chronaxia and a marked tendency to attacks of tetany through voluntary hyperpnea. On the other hand, hyperparathyroidism involves decreased chronaxia and great resistance (greater than normal) to attacks of tetany by voluntary hyperpnea. In both instances the variations in the chronaxia of the nerves and the muscles are parallel, in contrast to the condition in repercussions in which the chronaxia of the nerve remains normal while that of the muscle varies. The author believes that the latter difference may be due to the fact that the variations of the chronaxia in hypoparathyroidism and in hyperparathyroidism are humoral, while in repercussions the phenomenon is purely nervous and reflex, to which the muscle is more sensitive than the motor nerve. Furthermore, hypocalcemia increases the chronaxia and hypercalcemia diminishes it; some osseous lesions can cause changes in the chronaxia by reflex repercussion; and in numerous diseases with vasomotor disturbances the chronaxia varies with changes in the local circulation. The author believes that the study of the chronaxia of muscles should be given a place in the study of parathyroid disturbances.

Presse Médicale, Paris

40: 217-232 (Feb. 10) 1932

Eczema. R. Sabouraud.—p. 217.
Crushing of Fingers. M. Iselin and E. Berrocal Uribe.—p. 220.
Sea Sickness and Treatment. Gabriel and R. Leven.—p. 227.
Traction Sole for Fracture of Leg. P. Boever.—p. 228.

40: 273-296 (Feb. 20) 1932

Abscessed Bronchiectasis, Bronchiectasis-Forming Abscess and Bronchiectatic Abscess. E. Sergent.—p. 273.
*Rapid Form of Exophthalmic Goiter. P. Carnot, H. Bénard, M. Rudolf and P. Véran.—p. 276.
*Periarticular Infiltration with Procaine Hydrochloride in Sprains and Traumatic Arthritis. R. Leriche and R. Fontaine.—p. 280.
Bone Diseases and Disturbance in Calcium Metabolism: Two Cases. P. Delmas-Marsalet.—p. 282.
Angiography and Angiopneumography. A. Ravina, A. Sourice and L. Benzaquen.—p. 287.
Histologic Proof of Removal of Tonsillar Capsule. H. Proby.—p. 291.
Temporary Lowering of Clavicle in Exeresis of Malignant Tumors of Base of Neck. R. Peycelon.—p. 292.

Rapid Form of Exophthalmic Goiter.—Carnot and his co-workers report a case in which a woman, aged 29, in good health, suddenly experienced a painful thyroid congestion with considerable increase in the size of the gland, fever to 39 C. (102.2 F.) and extreme agitation. After a slight lull the fever, agitation and toxic signs increased. In one month the patient lost 20 Kg. (44 pounds) and registered a basal metabolism of 200 per cent. The aspect was impressive and the prognosis highly unfavorable: increased fever, exophthalmos, anguish, agitation, and tragic aspect. Death came on rapidly during coma (the disease lasted five weeks). The authors believe that clinically this case represents a remarkable example of a malignant, fulminating rapid form of exophthalmic goiter. The only histologic signs specific for the fulminating form of exophthalmic goiter consists in an extreme intensity and uniform diffusion of the primary or secondary glandular hyperactivity. The glandular hypertrophy is characterized by homogeneity of lesions, considerable epithelial hyperplasia with papilliferous proliferation and a pseudocancerous aspect, and an almost complete absence of colloid. One should hesitate in advising surgical interventions in such hyperacute cases. Medication by administration of iodine may help to place the patient in the best operative condition. Rapid ligation of the thyroid artery under local anesthesia is the best intervention.

Periarticular Infiltration with Procaine Hydrochloride in Traumatic Arthritis.—Leriche and Fontaine made this study subsequent to a previous observation of Leriche, who found that when injections of a local anesthetic were made at the level of ligaments and tendinous insertions in articular disturbances it was found possible to dissociate purely mechanical disorders from functional disorders that accompany them and sometimes exist practically alone. Furthermore, in certain instances, a therapeutic influence was noted. In instances in which the mechanical disturbances are reduced to a minimum and the impotence of the functional reflex dominates the scene, the functional disturbance either disappears or becomes less intense after local anesthesia. For sprains and traumatic arthritis the authors recommend repeated periarticular infiltrations, consisting of injections of from 10 to 25 cc. of a 1 per cent solution of procaine hydrochloride (without epinephrine); the injections can be made daily until recovery (sometimes four, five and six infiltrations are sufficient), and the patient experiences no inconvenience. Of course, the authors believe that the most favorable results obtained in their three cases of inveterate traumatic arthritis cannot always be guaranteed, but this therapeutic means should always be considered.

Clinica Medica Italiana, Milan

62: 627-716 (July) 1931

*Regular Extrasystolic Bigeminal Rhythm Associated with Cardiac Insufficiency. R. Capo.—p. 627.
*Pathogenesis of Morgagni-Adams-Stokes Disease. M. Calabresi.—p. 646.
Anatomopathologic Study on Tuberculosis in Miners. G. Borsalino.—p. 659.
Kahn Test for Syphilis. A. Frates and E. Bossi.—p. 674.
*Infantilism and Hypo-Evolutism in Disorders of Hepatosplenic Apparatus. C. Fittipaldi.—p. 689.
Acidosis and Diabetic Coma. V. de Antoni.—p. 704.

Regular Extrasystolic Bigeminal Rhythm Associated with Cardiac Insufficiency.—Capo reports, and illustrates with several electrocardiographic records, four observations of bigeminal rhythm occurring in heart patients with grave signs of cardiac insufficiency, following administration of small doses of digitalis or of ouabain. He analyzes the various pathogenic theories of this disturbance of cardiac rhythm and states that the appearance of bigeminal rhythm in the course of cardiac insufficiency may be considered a sign of grave prognosis. The patients studied died within two or three months after the development of the bigeminal rhythm.

Pathogenesis of Morgagni-Adams-Stokes Disease.—Calabresi describes a case of Morgagni-Adams-Stokes disease in which, in addition to the ordinary attacks, he observed other attacks similar in their nervous symptomatology but in which the stoppage of the circulation was absent while the oxygen and carbon dioxide content of the arterial and venous blood showed normal values. He discusses the cause of these attacks and concludes that the inadequate supply of arterialized blood brought to the medulla oblongata and the asphyxia of the myocardium may combine to cause also the classic attacks.

Infantilism and Hypo-Evolutism in Disorders of Hepatosplenic Apparatus.—Fittipaldi describes two cases of underdevelopment of the body, associated with lesions of the liver and of the spleen, which constitutes a contribution to the study of the hormone relations between the endocrine glands and the hepatosplenic apparatus. He concludes that such relations are not sufficient to explain the syndrome, and that not only the hypo-evolutism but also the hepatosplenic lesions may be regarded as expressions of an abnormal constitution.

Rivista Italiana di Ginecologia, Bologna

13: 1-124 (Nov.) 1931

Comparative Study of Biologic Test of Brouha and Simonnet and Aschheim-Zondek Test. N. Candela.—p. 1.
Changes in Vaginal Epithelium of Women During Menstrual Cycle. I. Davanzo.—p. 50.
*Malignant Tumors Appearing After Radium-Roentgen Therapy. G. Abruzzese.—p. 64.
Late Hemorrhages During Puerperium. F. D'Erchia.—p. 83.
Diagnosis of Pregnancy and Pupillary Reaction. T. Meneghini and C. Duc.—p. 113.

Malignant Tumors Appearing After Radiation Therapy.—Abruzzese suggests that it is well to watch carefully tumors not influenced, or only slightly influenced, by radium-roentgen treatment; to question the value of repeated application of such treatment, when the expected result is not secured, and to suspect irradiated tumors that show, following irradiation, an accelerated development, especially if there is a simultaneous appearance, persistence or accentuation of atypical blood losses. These, if they are isolated symptoms in women irradiated for any reason whatever, should be considered as recommending a meticulous diagnosis, with repeated biopsies and careful supervision of the patient, and if there is objective confirmation of the suspicion of a neoplasm not observed before the irradiation, it will be more prudent to exclude a new irradiation, and to resort rather to surgical treatment, which will more likely be complete, and hence definitively effective, the more carefully the operation is performed. This may prevent a diffusion beyond the limits of operability, which is, in such cases, rapid, as may be easily seen.

Brasil-Medico, Rio de Janeiro

46: 169-192 (Feb. 20) 1932

Exanthematic Typhus in São Paulo: Investigation of Transmission by Arthropoda. J. Lemos Monteiro, F. da Fonseca and A. Prado.—p. 169.
*Coconut Milk in Nutritional Disturbances of Infants. M. Gesteira and A. Bahia.—p. 173.
Treatment of Trachoma by Surgical Diathermy. A. Fonseca.—p. 177.
Placental Polypus: Case. C. Fleury de Araujo.—p. 177.
Roentgenography of Maxillary Antra with Iodized Sesame Oil as Contrast Medium. O. Lopes.—p. 180.

Coconut Milk in Nutritional Disturbances of Infants.—Gesteira and Bahia, on the basis of their experience with fifty infants with acute nutritional disturbances, conclude that coconut milk (obtained by pressing out the juice of the fruit after maceration), has a medicamentous and nutritive value and gives better results than almond milk as a transitional diet in acute nutritional disturbance in infants. The preparation of coconut milk is easier than that of almond milk, and at the same time its price is lower and its caloric value higher than that of almond milk. Because of the high caloric value of coconut milk (620 calories, whereas almond milk varies from 550 to 600 calories), coconut milk, instead of pudding, should be given to infants above 3 months of age, with nutritional disturbances.

Prensa Médica Argentina, Buenos Aires

18: 1129-1176 (Jan. 30) 1932. Partial Index

Histologic Structure of Congenital Xanthoma of Gingival Margin in New-Born Infants. J. M. Jorge and D. Brachetto-Brian.—p. 1129.
*Ligneous Thyroiditis: Two Cases. J. Diez.—p. 1144.
Diaphyseal Circulation of Long Bones: Its Importance in Etiology of Pseudo-Arthrosis. J. C. Caeiro and H. Mainetti.—p. 1156.
Hemolysis of Blood of Cancerous Patients from Effects of Erythrosin. A. H. Roffo.—p. 1167.

Ligneous Thyroiditis.—Diez reports two cases of ligneous thyroiditis with a detailed anatomicopathologic study of the excised pathologic portion of the gland. He objects to the opinion that simple thyroiditis is only an early stage of fibrosis of the thyroid. He believes that the recognition of ligneous thyroiditis as a condition well differentiated from simple thyroiditis will increase if the predominant characteristic of the disease, namely, the high degree of retractility of the pathologic tissues, is borne in mind. The disease, because of its sclerosing and atrophic nature, may cause a complete compression of the patient's trachea or esophagus with death of the patient by asphyxia in the first case or by inanition in the second case. The etiologic agent, which up to the present time is unknown (although it is believed that the disease has an infectious origin), is probably the cause of the sclerosis of the tissues. Most authors believe that a cuneiform resection of the pathologic portion of the thyroid is sufficient to cure the patient. Payr, in 1927, reported two cases without recurrences after sixteen years of a cuneiform resection of the pathologic portion of the gland. However, Diez advises wide resection (at least a lobectomy) to prevent recurrences. Wide resection of the thyroidal tissues was made in both cases of the author. No recurrences have been observed a year and a half after the operation was performed.

Beiträge zur Klinik der Tuberkulose, Berlin

79: 113-256 (Jan. 20) 1932

*Roentgenogram of Tuberculosis of Larynx. A. Thost.—p. 113.
Usually Benign Form of Spontaneous Pneumothorax. H. Dorendorf.—p. 142.
Treatment of Pulmonary Tuberculosis by Means of Convalescent Serum. C. Zach.—p. 150.
*Action of Hormone of Parathyroids on Blood Coagulation with Especial Consideration of Tuberculous Hemoptysis. G. F. Bume and T. C. Liu.—p. 154.
Predisposition for Tuberculous Meningitis. D. Orosz.—p. 163.
Primary Tuberculosis and Tuberculous Meningitis: True Subprimary and Early Secondary Meningitis. D. Orosz.—p. 173.
*Involvement of Tonsils in Tuberculosis. J. Otto.—p. 187.
Pathologic Anatomic Investigations on Tuberculosis of Bone System. E. Randerath.—p. 201.

Roentgenogram of Tuberculosis of Larynx.—Thost points out that the former pathologico-anatomic investigations on the larynx have the disadvantage that the preparation of the specimens with strong acids causes considerable changes, especially in the calcium deposits. Since calcium has not only a physiologic but also a pathologic significance, the roentgenogram made of the living structure, which shows the distribution of the calcium, gives information about the pathologic processes not detectable by means of histologic examination. In tuberculosis the normal distribution of calcium and the ossification process is inhibited and replaced by a calcium infiltration. In older persons, in whom calcification has already taken place, the calcium decomposes; that is, in tuberculosis there is a decomposition of calcium. In syphilis the process is entirely different. Here osteophytes develop, and sharp, hard calcium bodies, star shaped or spherical, are noticeable on the laryngeal skeleton just as on other portions of the skeleton and corroborate the diagnosis of syphilis. Thus the roentgenogram has diagnostic and differential diagnostic value. If tuberculosis and syphilis concur, the tuberculosis, as the stronger component, supersedes the syphilitic processes. Occasionally, however, the calcium outlines characteristic for syphilis are still visible. The roentgenogram also shows all air spaces and accessory cavities of the upper respiratory tract, especially the small space of the sinus of Morgagni. If this space is absent in the roentgenogram, it is an indication that there is swelling and infiltration of the mucous membrane. Tuberculous processes frequently originate at this site and, although they cannot be detected with laryngoscopy, they can be recognized in the roentgenogram. Another advantage of laryngeal roentgenoscopy is that it reveals changes in the cervical vertebrae.

Action of Hormone of Parathyroids in Tuberculous Hemoptysis.—In experiments on fifteen rabbits, Bume and Liu found that following intravenous injection of the hormone of the parathyroids the coagulation time becomes reduced from 40 to 60 per cent. This reduction is manifest ten minutes after the injection, but after twenty-five minutes it begins to increase again, and in ninety minutes the initial value is reached again. Clinical observation of ten cases of tuberculous hemoptysis proved that, following administration of hormone of the parathyroids, the hemorrhage ceased in nine cases. In one case the parathyroidal hormone failed to check the hemorrhage, but in this instance all other hemostatics were likewise ineffective. The hemorrhage finally ceased following oral administration of a vitamin D preparation. In two other cases in which several other hemostatics had been employed without avail, the hemoptysis ceased after administration of the parathyroid hormone preparation. The results seem to be best if 1 cc. (20 units) of the hormone preparation is injected from two to three times daily.

Involvement of Tonsils in Tuberculosis.—Careful macroscopic and microscopic examination of the tonsils, especially the pharyngeal tonsils, of forty-five tuberculous cadavers, mostly of children, revealed to Otto that in about 74 per cent of the cases the tonsils were involved in the form of a secondary infection. A primary infection of the tonsils and of the intestine was observed only once. Studies on all the organs and the microscopic examination of the bones of the base of the skull make it appear probable that during childhood the secondary tuberculous infection of the tonsils usually develops by way of the blood stream. Studies in seven selected cases revealed no microscopic signs for the differentiation of a resorptive or of a hematogenic tonsillar tuberculosis. A differentiation is possible to some extent only in the beginning stages. A hematogenic origin is then indicated by the occurrence of numerous, similar tubercles in the subepithelial and in the perifollicular lymphatic tissue. An involvement of the follicles is only rarely observable. A resorptive tuberculosis can be assumed in cases of a pronounced involvement of the superficial subepithelial tissue layers. In somewhat advanced cases of resorptive as well as of hematogenic tuberculosis, the lymphatic tissue shows the most changes. The cases studied by the author gave no indications for the development of a tuberculous leptomeningitis by lymphogenic spreading from the tonsils. However, in spite of the frequent secondary involvement of the tonsils in tuberculosis during childhood, this complication has only in rare cases a certain significance for the course of the tuberculosis, for the tuberculous lesions of the tonsils usually heal by cicatrization, and extensive destructive processes are a rarity. The careful study of the hematogenic and resorptive tonsillar tuberculosis shows that it is difficult to determine the pathogenesis on the basis of the histologic observations.

Deutsche medizinische Wochenschrift, Leipzig

58: 283-320 (Feb. 19) 1932

Pneumonoconiosis and Pulmonary Tuberculosis. W. Gerlach.—p. 283.
Asbestosis of Lung. Gerbis and Ucko.—p. 285.
Fate of Patients with Diabetes Mellitus. F. Umber.—p. 287.
Orthostatic Albuminuria and Its Psychophysical Aspects. J. Schreiber. —p. 291.
Myeloid Leukemia as Indication for Prevention of Pregnancy. H. O. Neumann.—p. 292.
*Nutritional Treatment of Diarrhea in Nurslings. S. Rosenbaum.—p. 293.
Artificial Production of Cardiac Sounds and Murmurs. L. Jacobsohn. —p. 295.
Peritonitis in Cirrhosis of Liver. G. Pitsoris.—p. 296.
Technic of Drop Ether Narcosis. W. Sigwort.—p. 297.
Effect of Single Excessive Dose of Viosterol. Wulfsohn.—p. 298.
Seasonal Fluctuations in Skin Diseases. F. Stern.—p. 298.
Hygienic Conditions in Barber Shops. Schrader.—p. 301.

Nutritional Treatment of Diarrhea in Nurslings.—Rosenbaum begins the treatment of diarrhea in nurslings with a fasting period of from six to twelve hours. Then he gives concentrated rice gruel (10 per cent), at first without the addition of carbohydrates, but on the second day he adds 3 per cent of carbohydrates in the form of sugar, and on the third day he adds 5 per cent. In order to increase the food value he later adds egg yolk to the rice gruel. Beginning with the fourth or fifth day, a milk mixture is gradually introduced into the diet by replacing first one and then two of the rice gruel feedings by milk. As the three kinds of milk that are most commonly used the author mentions protein milk, buttermilk and human milk. To counteract the dehydration he recommends oral administration of water. Only in cases in which the circulation fails is the parenteral administration of fluids advisable, in the form of subcutaneous injection of Ringer's solution. In order to prevent scurvy, fresh fruit juices should be given as early as possible. In severe cases, blood transfusion may prove helpful. Several transfusions of small quantities (20 cc.) are better than a single larger transfusion. As another important factor in the treatment of severe diarrhea the author mentions the permanent administration of oxygen. He describes a simple endonasal administration of oxygen, which he found helpful, especially in persistent intoxications.

Klinische Wochenschrift, Berlin

11: 265-312 (Feb. 13) 1932

Epidemiology of Skin and Venereal Diseases. A. Buschke, A. Joseph and H. Ollendorff.—p. 265.
So-Called Constant Composition of Pure Gastric Juice. H. Kalk. —p. 270.
Malignant Tumors of Testis and Hormones of Anterior Lobe of Hypophysis: Hormonal Diagnosis from Urine, from Fluid of Hydrocele and from Tumor Tissue. B. Zondek.—p. 274.
Action of Various Fractions of Adonis-Bernalis on Heart of Frog. O. Lürmann and K. Lauer.—p. 279.
Animal Experiments and Clinical Experiences on Hormones of Suprarenal Cortex. S. Loewe, L. Marx, F. Rothschild, H. E. Voss and A. Buresch.—p. 281.
Nephelometric Microdetermination of Cholesterol According to Digitonin Method. O. Mühlbock and C. Kaufmann.—p. 284.
Use of "Apiol" as Cause of Characteristic Form of Polyneuritis. A. Reuter.—p. 286.
*Diathermy Treatment in Diseases of Liver. G. Goldgruber.—p. 286.
Differential Diagnosis of Multiple Myelomas and of Osteitis Fibrosa Generalisata. E. Ask-Upmark.—p. 288.
Occurrence in Blood Serum of Complement Fixing Antibodies for Egg and Cow's Milk. A. Strobl and A. Wasitzky.—p. 289.
Cancer Reaction According to Hirszfeld and Halber. J. Marzynski and L. Silberstrom.—p. 290.
Immunigenesis and Skin Reactivity in Earliest Childhood. I. Nasso. —p. 291.

Diathermy Treatment in Diseases of Liver.—Goldgruber employed heat by means of diathermy for the treatment of various disorders of the liver, such as in icterus catarrhalis, which may persist for weeks and even for months and may be a pathogenic factor in cirrhosis of the liver, also in cases of arsphenamine icterus that are refractory to other treatments, and in cases of chronic cholangeitis. His object in resorting to diathermy was to influence certain pathologic functions by active hyperemia and improvement of the circulation of the bile, also by resorption of inflammatory infiltrates and of metabolic waste products, further by the stimulation of secretion and of excretion, and by the regenerative action of heat on cells and tissues. By simultaneous application of the duodenal catheter, the author observed the therapeutic action of the diathermy treatment. He observed that whereas without the application of diathermy the bile was pale green, following the treatment it was darker and the flow was more profuse. The technic of the diathermy of the liver was simple. Plate electrodes 12 by 18 cm. were applied to the anterior and to the posterior region of the liver. The current strength was from 1 to 2.5 amperes, which was applied for two hours and was repeated daily or every other day. The total duration of the treatment varied individually. The method was employed in eighteen cases, three of which are reported in detail. Only in two cases did the diathermy treatment fail. Later the author tried diathermy treatment also in other hepatic disorders, such as cholecystitis, cholelithiasis and cholangeitis, and when pains were felt in the region of the liver following cholecystectomy. In conditions of this nature diathermy had been successfully employed by others, but the author was not able to duplicate these successes. On the contrary, he usually was obliged to discontinue the treatment on account of unbearable pains. He is unable to explain this paradoxical manifestation but thinks that the increasing biliary secretion may not have a proper discharge and thus lead to stasis and tension. Another problem that is yet to be investigated is whether the high frequency currents are active only by their resistance warmth or whether they also exert still unknown physical and chemical actions.

Acta Medica Scandinavica, Stockholm

43: 1-93, 1932. Supplement

*Spontaneous Pneumothorax in the Apparently Healthy. H. Kjærgaard. —p. 17.

Spontaneous Pneumothorax in the Apparently Healthy.—Kjærgaard believes that "spontaneous pneumothorax in the apparently healthy" is a nosographic category of practical value. This term covers all cases of spontaneous pneumothorax that makes its appearance without any demonstrable cause in healthy persons, in whom no sign of tuberculosis may be demonstrated, either by auscultation and roentgen examination or by bacteriologic examination of the sputum, and in whom the disease takes an afebrile course, without pleural effusion. In this class are also included cases of this description with a slight rise of temperature in the first week of illness, and cases in which the roentgenograms show the presence of an insignificant pleural exudate, too small to be made out on auscultation. The disease is subject to great variation in clinical features and course, and there are all degrees of transitions between the various types. The disease is due to the rupture of a valve vesicle on the surface of the lung. There are two forms of valve vesicles. One form, the scar-tissue vesicles, develops especially in the apexes of the lungs, next to a scar that may originate from a small healed tuberculous process. These scar tissue vesicles are often multiple. The other form, the emphysematous valve vesicles, is produced alone through local emphysematous changes without scar tissue. These may be found as large solitary vesicles on the margins of the lungs. Probably the scar tissue vesicles constitute the more frequent form of valve vesicles. Systematic after-examinations of a large number of patients with long observation period have shown that in practice it may be taken for granted that this disease has nothing to do with active tuberculosis. So these patients should be spared the loss of time and the expense of a sanatorium treatment as well as the fear of pulmonary tuberculosis. The author suggests that spontaneous pneumothorax in the apparently healthy be called "pneumothorax simplex."

Ugeskrift for Læger, Copenhagen

94: 187-214 (Feb. 25) 1932

*Application of Group Characteristics in Criminology with Especial Regard to Examinations of Stains. L. Christensen.—p. 187.
One Thousand One Hundred and Ninety-Eight Aschheim-Zondek Reactions: After-Examination. H. C. A. Lassen.—p. 198.

Application of Group Characteristics in Criminology.—Christensen reviews the results obtained by the University Medicolegal Institute by the absorption method of group determination of stains and says that the work is encouraging both from the scientific and from the criminologic standpoint. Fourteen cases are reported, in most of which the investigations of blood and semen stains, also one urine stain, done at the request of the police, gave valuable indications.